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MASTER'S THESIS

An Investigation into Educational Personnel Knowledge of Functional Assessment Applications in Students with an Autism Spectrum Disorder

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Running head: FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

**An Investigation into Educational Personnel Knowledge of Functional Assessment
Applications in Students with an Autism Spectrum Disorder**

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Bond University

Submitted in total fulfilment of the requirements for the degree of
Masters of Arts (Research)
School of Counselling and Behaviour Management
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Bond University
Gold Coast
Submitted on the 2nd day of March, 2016

Declaration of Originality

This thesis is submitted to Bond University in fulfilments of the requirements of the degree of Master of Arts (Research). This thesis represents my own original work towards this research degree and contains no material which has been previously submitted for a degree or diploma at this University or any other institution, except where due acknowledgement is made. All of the raw data and analyses have been retained and are available upon request. I certify that I have made and retained a copy of this document.

Benjamin S. Tomecek
2nd March, 2016

Abstract

Students with Autism Spectrum Disorder (ASD) provide unique challenges to educators, requiring the provision of individualised, inclusive education into mainstream State Schools. The integration of such students is complicated when they display challenging behaviour which often restricts performance in educational environments. Functional Behavioural Assessment (FBA) presents a robust basis for contextualised data-collection which can aid in development proactive and comprehensive multi-element interventions to facilitate positive changes in the challenging behaviour of students with ASD. Recent research has questioned the preparedness of educators to apply FBA data-collection techniques. Such questions are raised on the basis that FBA methodologies require specialised training which, when absent, may prevent the adoption of FBA by educators.

The present investigation focused on the training needs of Education Queensland educators involved in teaching and supporting students with ASD. This research aimed to investigate three main foci: how the challenging behaviours of students with an ASD were assessed and treated within the school context; whether inter-role differences occurred in the knowledge and application of behavioural assessment; and whether a gap existed between best-practice guidelines for FBA outlined through research and current educator practice.

A mixed methods research design containing two sequential studies was conducted to examine educators' knowledge and application of FBA assessment and intervention processes. Study 1 utilised a semi-structured interview with 40 educators from South-East Queensland State Schools the results of which informed the

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

development of a survey applied to a subsequent group of 94 educators from the same state district in study 2.

The results of both studies indicated that a large number of participants (62.5% in study 1 and 79.8% in study 2) had not received any training into FBA and confirmed the presence of inter-role variability in FBA knowledge. Results also demonstrated the presence of errors in the application of FBA data-collection technologies when compared to best-practice guidelines. The presence of specific barriers which may prevent the successful translation of FBA data-collection are discussed, along with clinical/educational implications and directions for future research.

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TABLE OF CONTENTS

Chapter 1 - Introduction	1
Chapter 2 - Autism Spectrum Disorder	9
2.1 Definition of Autism Spectrum Disorder	9
2.2 Clinical Features of ASD	14
2.3 Increasing Prevalence of ASD	19
2.4 Gender Differences in ASD	21
2.5 Comorbid Conditions and ASD	22
Chapter 3 - Disability Policy and Legislation in Australian Schools	26
3.1 Educational Service Provision for Individuals with ASD.....	26
3.2 International Trends in the Development of Policy and Legislation	29
3.3 Development of Disability Legislation in Australia	32
3.4 Inclusionary Legislation in Practice in Australia	33
3.5 Legislative Impacts on Service Provision for ASD Students in the School System	36
Chapter 4 - Functional Behavioural Assessment.....	40
4.1. Definition of Functional Behavioural Assessment.....	41
4.2. History of FBA.....	43
4.3. Effectiveness of FBA in Relation to ASD and Challenging Behaviour within School Settings	47
4.4. Best Practice Implementation of FBA in School Settings	49
Chapter 5 - School-Based Functional Behaviour Assessment for Students with ASD..	52
5.1 Translation of Functional Behaviour Assessment to Create “Best Fit” Procedures for School Contexts	52
5.2 Evidence of Barriers to the Translation of FBA into Australian Schools....	54
5.2.1 Complexity of FBA Procedures	56
5.2.2 Complexity of Student Behaviour	58
5.2.3 Poor Assessment-Intervention Links.....	60
5.2.4 Discontinuity of FBA Data-Collection Following Initial Assessment.....	62
5.2.5 The Need for Quality Practitioners Capable of Interpreting Behavioural Data	64
5.3 Improving the Translation of FBA into Schools.....	65
Chapter 6 - Review of Data Analysis Frameworks and Procedures for Study 1	71
6.1 Description of Research Methods	71
6.2 Study 1 Research Design.....	74
6.3 Objectives, Procedures and Outcomes of Thematic Analysis.....	77
6.3.1 Objectives of Thematic Analysis.....	79

6.3.2	Conducting a Thematic Analysis.....	81
6.3.3	Maintaining Objectivity in Thematic Analyses.....	85
6.3.4	Proposing a Combined Thematic Analysis Framework.....	88
Chapter 7 - Methods for Study 1: Administration and Thematic Analysis of the School-Based FBA Interview		91
7.1	Participants	91
7.3	Description of the School-Based FBA Interview.....	94
7.3.1	Section A – School-Based FBA Interview Questions	96
7.3.2	Section B – Clinical Vignettes.....	98
7.4	Procedure for Administration of the School-Based FBA Interview	100
7.5	Analysis of Data	102
7.6	Methods for Conducting the Thematic Analysis.....	102
7.6.1	Transcription and Familiarisation of Data.....	103
7.6.2	Initial coding and development of a code manual.....	103
7.6.3	Testing the Reliability of the Codes	104
7.6.4	Application of the Codes and Identification of Initial Themes	104
7.6.5	Review of Themes	105
7.6.6	Connecting Codes and Definition of Themes	105
7.6.7	Production of Written Report	105
Chapter 8 - Study 1 – Results		107
8.1	Themes Relating to Educator Training and Competencies	107
8.2	Themes Relating to Educators’ Understanding of Behavioural Assessment and Intervention Processes Relating to Students with an ASD.....	110
8.3	Themes Relating to the Application of FBA Data-collection and Data-Interpretation Techniques	115
8.4	Themes Relating to the Application of FBA Intervention Techniques.....	117
8.4.1	Selection of Behavioural Interventions	117
8.4.2	Evaluation of Intervention Success	119
8.5	Themes Relating to the Application of FBA via Clinical Vignettes.....	120
8.5.1	Targets for Vignette 1	121
8.5.2	Targets for Vignette 2.....	124
Chapter 9 - Discussion of Study 1		127
9.1	Summary of Educator Qualifications and Perceived Capabilities in Educating Students with an ASD	127
9.2	Educators Understanding of Behavioural Assessment.....	129
9.3	Translation of FBA-based Assessment Systems into Queensland Schools	131
9.4	Limitations and Implications for Further Research.....	133

Chapter 10 - Methods for Study 2: Administration and Analysis of the School-Based FBA Survey	136
10.1 Participants	136
10.2 Participant Recruitment.....	138
10.3 Description of the School-Based FBA Survey.....	140
10.3.1 Section A – Biographical and Demographical Information	141
10.3.2 Section B – Educator Responsibilities	141
10.3.3 Section C – Statements about FBA	142
10.3.4 Section D – Clinical Vignettes	143
10.4 Procedure for Administration of School-Based FBA Survey	145
10.5 Analysis of Survey Data.....	147
10.5.1 Analysis of Demographic Information and Educator Training	147
10.5.2 Analysis of Educator Roles, Responsibilities and Attitudes towards FBA ..	148
10.5.3 Analysis of the Clinical Vignettes	148
Chapter 11 - Study 2 – School-Based FBA Survey Results.....	151
11.1 Exploration of Participant Responding	151
11.2 Participant Demographics	152
11.3 Likelihood of Educators Having Received ASD or FBA-based training ..	153
11.4 Receiving FBA Training is Dependent upon Educator Role and Responsibility	155
11.5 Components of FBA Frameworks are Being Implemented within Schools	158
11.6 Educators have Beliefs about FBA that are Not Consistent with Findings in the FBA Literature.....	159
11.7 Gaps in the Application of FBA for Students with ASD	162
11.7.1 Identification of Significant Factors Prior to Implementing FBA.....	163
11.7.2 Application of FBA Concepts	165
Chapter 12 - Study 2 – School-Based FBA Survey Discussion	169
12.1 Summary of Educator Training.....	170
12.2 Educator Knowledge of FBA Processes	171
12.3 Identification of Behavioural Targets	173
12.4 Barriers to the Implementation of FBA in Schools.....	174
12.4 Clinical and Educational Implications	176
12.5 Limitations of the study.....	178
12.6 Conclusion.....	179
Chapter 13 - Combined Discussion for Study 1 and Study 2.....	180
13.1 Educator Knowledge of FBA Aims, Procedures and Outcomes	181
13.2 FBA Knowledge Differences exist between Educator Roles.....	183

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

13.3	Structured Behavioural Assessment Systems Exist which inform Behavioural Intervention	184
13.4	Ongoing Monitoring of Behavioural Intervention does not Occur	185
13.5	Educator Perceptions and Attitudes towards FBA.....	186
13.6	Recommendations for Further Research	188
13.7	Conclusion.....	190
REFERENCE LIST		192
APPENDIX A		225
APPENDIX B.....		228
APPENDIX C.....		228
APPENDIX D		233
APPENDIX E		235
APPENDIX F		236
APPENDIX G		238
APPENDIX H		249
APPENDIX I.....		255
APPENDIX J.....		256

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

Tables

Table 6.1 – Braun & Clarke’s (2006) framework for the application of thematic analysis	84
Table 6.2 – Fereday & Muir-Cochrane’s (2006) Framework for the application of thematic analysis	87
Table 7.1 – Demographic characteristics of participant sub-groups	92
Table 8.1 – Number of Educators’ who Attended Additional Training Relating to ASD and/or FBA	108
Table 8.2 – Educators’ Belief on their own Capability of working with students with an ASD	110
Table 8.3 – Description of Educator Processes for Providing Support to Students with an ASD Diagnosis.....	112
Table 8.4 – Comparison of Targets for Vignette1 by Educator Role	123
Table 8.5 – Comparison of Targets for Vignette2 by Educator Role	125
Table 10.1 – Number of participants per educator sub-group	138
Table 11.1 – Descriptive Characteristics of Educators in the Sample	152
Table 11.2 – Years of Experience of Teachers Included in the Sample	153
Table 11.3 – Number of Educator Responses to Statements about FBA	160
Table 11.4 – Application of Student-based Summary via Training Types	164
Table 11.5 – Comparison of the Application of FBA Components with and without Training	166

Figures

Figure 6.1 – Combining Bruan & Clarke’s (2006) and Fereday & Muir-Cochrane’s (2006) thematic analysis frameworks	89
Figure 7.1 – Application steps utilised in the application of the thematic analysis	106
Figure 8.1 – Diagrammatic Representation of Specialist Personnel and Familiarity with FBA Processes.....	113
Figure 11.1 Types of ASD Training Received by Educators.....	154
Figure 11.2 Types of FBA Training Received by Educators.....	155
Figure 11.3 – Comparison of Educator Responsibilities towards ASD students Based on Receiving FBA Training	157

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

Figure 11.4 – Breakdown of Educator Responsibilities in Relation to FBA-related tasks	159
Figure 11.5 – Comparison of FBA-related Beliefs Based on Receiving FBA Training	162

Chapter 1

Introduction

The emergence of policy which advocates for inclusion of students with disabilities into Australian State Primary and Secondary Schools has presented significant challenges for educators to develop and apply structured student-focused approaches for enacting the requirements of those policies within their own practice and the wider school communities. These policy requirements not only focus on inclusion of age-appropriate curriculum activities but also meaningful engagement in the social aspects of school life. Research suggests (e.g., Bigby, 2012; Carr et al., 2002; LaVigna & Willis, 2005) that social inclusion is often hindered when students with disabilities also show evidence of challenging behaviour which is resistant to the generic behaviour management approaches adopted within school environments. Challenging behaviour of sufficient severity to create pervasive interference with student learning and engagement clearly necessitates more specialised assessment and intervention approaches which are not always within the capacities of non-specialist educators who teach in mainstream classrooms. This need for specialised approaches to addressing students' challenging behaviour has prompted educators to search for evidence-based interventions that capable of providing a robust basis for decreasing challenging student behaviour, whilst at the *same time*, encouraging positive skill development.

Current research (e.g., Carr, Langdon & Yarbrough, 1999) has advanced the concept that the key to creating meaningful changes in challenging behaviour is to understand its purpose and significance in assisting students to cope with classroom demand. Further, modifying challenging behaviour without first understanding it (via objective assessment) is considered to constitute a 'trial-and-error' approach which risks

causing escalation of negative responding -- especially when modification aims to remove challenging behaviour that functions to reduce adversity in the learning environment (Kern & Dunlap, 1999; Gratz, 2003; Munk & Karsh, 1999; Dishion, & McMahon, 1998). If, as strongly recommended in the research, the essential element to effective behaviour change is data-based understanding of challenging behaviour, then identification of the best process for educators to achieve this goal in their classrooms and the wider school context becomes crucial.

In recent history, researchers (e.g., Allday, Nelson & Russel, 2011; Hanley, 2012) have provided convincing evidence that Functional Behaviour Assessment (FBA) offers a robust basis for contextualised data-collection which effectively achieves the goals of: (1) assessing challenging behaviour and identifying the environmental factors which contribute to its occurrence and (2) guiding selection and planning of interventions to remediate that behaviour via development to positive skills. However, despite its potential for success in assisting students with disabilities, FBA continues to be used minimally or poorly in Australian mainstream schools. Researchers (e.g., O'Neill & Stephenson, 2011; Crone & Horner, 2003) agree that the non-usage of FBA in schools has arisen from a mismatch between the research contexts (in which FBA procedures are evaluated) and classroom context (in which student behaviour occurs) (Blood & Neal, 2007; Bitsika, 2008; Gable, Hendrickson & Van Acker, 2001). There is also agreement on the issue of FBA being a specialised assessment process in which mainstream educators have received minimal or (at best) variable exposure or training (Hanley, 2012; Allday, Nelson & Russel, 2011; Crone & Horner, 2000). Due to these impediments to school-based applications of FBA, researchers have called for further investigations into the best methods for (1) translating laboratory-derived FBA procedures into practical classroom-

relevant strategies and (2) training practitioners to implement FBA within their daily routines and workloads.

The research reported in this thesis focused on the training needs of Education Queensland educators involved in teaching/supporting students with ASD by investigating their knowledge and application of FBA to this student group. In specific terms this research gathered first interview (i.e., Study 1) and then survey (i.e., Study 2) data from two groups of Education Queensland educators working in mainstream schools in order to: (1) explore educator knowledge of FBA procedures with specific reference to the challenging behaviour of students with ASD, (2) identify whether FBA was being utilised as an assessment process by them to assist in development of behavioural interventions for students with ASD, and (3) determine the presence of any knowledge gaps or barriers that might contribute to low or poor use of FBA procedures by educators in their daily practice.

Chapter 2 of this thesis discusses Autism Spectrum Disorder (ASD) in relation to the evolution of this diagnostic category and current requirements for detection with particular focus on the Diagnostic and Statistical Manual of Mental Disorder—Fifth Edition (DSM-5; APA, 2013). The impacts of ASD on daily functioning are discussed in relation to the concept of *primary* impairments (i.e., the cluster of deficits required for diagnostic purposes) versus *secondary* deficits (i.e., the associated behavioural and other difficulties which restrict performance). This chapter also contains detailed data relating to the prevalence, sex-ratio, and severity levels associated with ASD and also discusses the other psychiatric and/or developmental conditions which have been shown to co-exist with ASD, possibly causing exacerbation to autism-specific symptoms.

Chapter 3 of this thesis discusses educational, disability policy and legislation in relation to the inclusion of students with ASD in mainstream, State Schools and subsequent provision of services. The emergence and evolution of disability legislation internationally is discussed with particular focus on the trends that have occurred in America and Europe. These trends are discussed and contrasted with the development of disability policy in Australian schools. This chapter also contains discussion on the impacts of policy-based inclusion of students with disabilities (such as ASD) with particular focus upon the need for assessment frameworks aimed at assisting educators in providing information on the challenging behaviour associated with ASD within a school environment.

Chapter 4 of this thesis discusses the emergence of FBA as a viable framework to develop proactive and comprehensive multi-element interventions to facilitate positive changes in the challenging behaviour of students with ASD. A definition for FBA is provided which emphasises the role of *function* in behavioural assessment and how it is used to inform individualised, behavioural adjustments. Details are provided tracing the evolution of FBA technologies from their early stages highlighting key advances which have informed the development of specific methods of assessing behavioural function. This chapter also provides data supporting the effectiveness of FBA in informing the selection and development of student behavioural, intervention plans and provides an evidential framework considered ‘best practice’ for applying FBA in school settings.

Chapter 5 of this thesis discusses difficulties which arise due to the translation into the school environments from predominantly clinically-based FBA practices described in the research literature. Evidence is presented detailing the challenges which exist in moving a primarily clinical process into mainstream schools. Five barriers are described

which, when present, may prevent successful implementation of school-based FBA and evidence is provided. This chapter also discusses the role of adequate FBA training for educators in ensuring effective translation of FBA techniques into school environments, and thereby, the effective implementation of FBA in these settings. The emphasis on educator training in FBA provides a basis for the two investigations contained within this thesis which aimed to identify how the challenging behaviours of student with ASD were assessed, whether inter-role variation existed in the knowledge and application of FBA, and whether gaps existed between current educator practice and best-practice guidelines outlined in the research.

Chapter 6 of this thesis reviews the data analysis frameworks and procedures that were used for Study 1. Descriptions of these frameworks and procedures provides a basis for incorporating a mixed-methods research design in which the collection of qualitative data (i.e., the School-Based FBA Interview) in Study 1 was used to inform the development of a quantitative data collection instrument (i.e., the School-Based FBA Survey) used in Study 2. This chapter also provides a rationale for incorporating thematic analysis to interpret the results of Study 1. Key objectives and processes associated with thematic analysis are discussed with particular focus on the two major methodological frameworks for conducting such analysis. A rationale for combining these two frameworks in order to maintaining rigour throughout the qualitative analysis is proposed.

Chapter 7 of this thesis presents detailed descriptions of the methods used to conduct the School-Based FBA Interview with 40 educators recruited from the South-East district of Education Queensland as part of Study 1. This chapter provides specific details regarding the recruitment processes and interview settings and the administration processes utilised in applying a semi-structured interview format. An itemised description

of the School-Based FBA Interview is provided including a rationale for the inclusion of two clinically-based, student vignettes which used in the triangulation of participant responses regarding behavioural assessment targets and techniques. Also included in this chapter is a detailed, step-wise procedure for the application of the thematic analysis to the interview data, expanding on the methodological framework proposed in the previous chapter.

Chapter 8 of this focuses on detailing the results of Study 1 obtained through application of a thematic analysis of participant data collected from the School-Based FBA Interview. The major themes identified are presented in relation to five key analytical categories. They are: educator training and competencies, application of FBA data-collection and data-interpretation techniques, application of FBA intervention techniques, educators' understanding of behavioural assessment and intervention processes relating to students with ASD, and application of FBA procedures during review of two vignettes which represent the behavioural difficulties typically experienced by students with ASD in the classroom and wider school environments. Results are presented indicating that educators receive little training in FBA, and that FBA was not valued by educators as a viable assessment option. Further details are also provided on educators' application of behavioural data-collection processes which indicate that limited capacity for the use of systematic data-collection in the development of needs-based interventions for students. . However, the inclusion of student assessment for purposes such as verification of diagnosis and the receipt of additional resourcing were found.

Chapter 9 of this thesis provides an integrated discussion of the results obtained from Study 1 and the effects and influences it will have on the FBA within schools. The trends uncovered following 40 interviews are used to evaluate educator knowledge and

understanding of FBA data-collection processes. In particular this chapter provides an evaluation of behavioural data-collection systems which exist within the participants schools is conducted in relation to the presence of potential barriers which may prevent the translation into Queensland State Schools. This chapter also discusses the methodological limitations of this study as well as identifying implications for the development of Study 2.

Chapter 10 of this thesis provides a detailed description of the methods used in the administration of the School-Based FBA Survey with 94 educators recruited from the South-East district of Education Queensland as part of Study 2. This chapter provides specific details on the recruitment processes and interview settings and the administration processes utilised in the administration of the survey instrument. An itemised description of the School-Based FBA Survey is included presenting each of four sections which comprised the survey instrument. This chapter also discusses the separate coding and analysis processes used for each section of the School-Based FBA Survey.

Chapter 11 of this thesis presents the results of Study 2 obtained through analysis of participant data collected from the School-Based FBA Survey. Key demographical information describing the gender, educational qualifications, teaching area, and years' experience of the sample is provided. Results are presented confirming the occurrence of minimal training in FBA across the sample group and evidence is provided that indicates the presence of inter-role variability in the provision of such training. This chapter also identifies that components of FBA are being utilised in schools, but confirms the presence of knowledge gaps in the application of FBA data-collection and analysis processes to the student-focused, clinical vignettes.

Chapter 12 focuses on the integration of the results obtained from study 2 and the effects and influences these results will have on the application of FBA within school environments. Discussion of the trends uncovered following the application of 94 surveys is presented in relation to the existence of barriers which prevent effective translation of FBA data-collection techniques. The presence of significant knowledge gaps in the application of FBA-based components is discussed as is the impact of training on behavioural data-collection targets. Further barriers existed in relation to educators' beliefs about, and attitudes towards, utilising FBA within their own practice. Methodological limitations of the study are discussed and both clinical and educational implications of the results obtained are detailed which will impact on the provision of FBA training to educators in the future.

Chapter 13 of this thesis provides a combined discussion of the results obtained through both Study 1 and Study 2. Detailed discussion is provided integrating the results of both studies in relation to the research questions proffered in Chapter 5. This discussion confirms the need for FBA training programmes aimed specifically towards educators and the unique challenges they face in adopting behavioural data-collection into school environments. Recommendations for future investigation are provided which identify directions necessary to extend the findings contained within this thesis.

Chapter 2:

Autism Spectrum Disorder

2.1 Definition of Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) is classified as a lifelong, neurodevelopmental disorder characterised by a number of behavioural features which create difficulties with perception and engagement within the social environment (Frith, 1991; Fuentes et al., 2014). Wing and Gould (1979) developed the “triad of impairments” model which described three core areas of deficit central to the definition of Autism Spectrum. The triad of autism impairments, as conceptualised by Wing and Gould, described deficits to three general domains of social functioning which they believed to be present in all individuals with an ASD: communication impairment, social impairment, as well as imagination impairment (Wing & Gould, 1979). This model also acknowledged the presence of rigid thought and play patterns and difficulty in the ability to problem solve and predict outcomes on a day-to-day basis (Durand, 2014). The triad of impairments model was one of the first to describe the specific areas of impairment characteristic of autism which was incorporated in the DSM-III-R in its specification of diagnostic criteria for autism, thereby distinguishing it from other childhood disorders (e.g. childhood schizophrenia) (Wolf, 2004). This specification widened the triad model by discussing impairment to three distinct areas of functioning rather than focusing specifically on social functioning (Weinstein, 2010). Reconceptualisation of the triad model removed the focus from autism being a “social disorder” by referring to “communication” rather than “social communication” and introducing the “restricted repetitive and stereotyped patterns of behaviour, interests, and activities” criterion (Durand, 2014).

Historically, the two major childhood disorders which reflected the difficulties described by Wing and Gould (1979) were Autism, which was reported by Leo Kanner (1943) from his initial descriptions of children with divergent social development, and Asperger's Syndrome which was characterised by average to above-average intelligence and age-appropriate verbal abilities but difficulty in social interaction and poorer motor coordination skills (Asperger, 1944). Additionally, a further phenotype, initially described by Theodore Heller, characterised a third group of children who displayed typical social development before regressing to eventually resemble the children described by Kanner which was later named Childhood Disintegrative Disorder (Volkmar, 2010). The similarities between these three distinct groups led to widespread adoption of the Wing and Gould's autistic triad, as this model was capable of incorporating variation in the severity and manifestation of these fundamental impairments while remaining conceptually coherent (Hanbury, 2012).

This variation in symptom patterns not only impacted prognostic outcomes but influenced the diagnostic structures and procedures employed to detect autism conditions (Mash & Wolfe, 2013; Volkmar, Lord, Bailey, Schultz & Klin, 2004). While diagnosis of autism has predominantly occurred based on Wing and Gould's Autistic Triad, understanding of the core deficits of ASD conditions, and thereby the classification of the disorder, has changed dramatically over time in subsequent iterations of diagnostic manuals such as the Diagnostic and Statistical Manual of Mental Disorders. The evolution in autism-specific diagnostic criteria, which follows, will focus on this manual as it comprises the basis for autism detection in Australia. The third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (APA, 1980) introduced the term Pervasive Developmental Disorder (PDD), a general diagnostic label which described two

conditions (i.e., Infantile Autism and Regressive Autism) distinguished primarily by the age at which children showed evidence of the symptoms underlying neurological abnormality (Szatmari, 2011). By the advent of the DSM-IV-TR: APA, 2000), the PDD classification was expanded to include five distinct diagnoses: Autistic Disorder (i.e., Kanner's 'classic autism'), Asperger's Syndrome, and Childhood Disintegrative Disorder and included two other disorders: Rett's Disorder, a progressive degenerative disorder which was initially believed to be almost exclusively observed in females, and Pervasive Developmental Disorder – Not Otherwise Specified, which was initially introduced as a 'leftover category' used to describe individuals who met some, but not all, diagnostic criteria of Autism (APA, 2000). However, there was some evidence (e.g. Chakrabarti & Fombonne, 2001) that the PDD-NOS diagnosis represented subgroups of children who were too young to display repetitive behaviour, too low functioning to be able to exhibit impairments in verbal communication, or too high functioning to show evidence of severe social communication impairments (Szatmari, 2011). Thus, researchers (e.g. Mahoney et al., 1998; Walker et al., 2004) criticised the inability of professionals to distinguish between the sub-types of ASD on the basis that PDD-NOS had become a 'catch-all' diagnostic category.

The current and fifth edition of the DSM has introduced a number of changes aimed at simplifying the diagnostic process and better capturing the heterogeneity of the autism spectrum (Fraizer et al., 2011; Bradley, Caldwell & Underwood, 2013; Lord & Bishop, 2015). Due to the difficulty in differentiating between subtypes of PDD, autistic difficulty is now conceptualised as a single diagnostic label (i.e., ASD) used to describe a spectrum of disorders which, despite differences in presentation, represent one underlying condition (Bölte, 2015; Waterhouse, 2013). The use of a single diagnostic label advocates a shared

symptomology which characterises one core disorder but acknowledges the possibility of numerous subtypes with differentiation occurring via severity rating which is judged in relation to intensity of difficulties across the two impairment areas for ASD (APA, 2013).

The DSM-5 reconceptualises the core symptom clusters (Harris, 2014), specifying that individuals diagnosed with an ASD must show evidence of pervasive impairment in two major domains of functioning; (1) social communication and social interaction, and (2) the expression of restrictive or repetitive behaviour, interests and activities (APA, 2013). The reduction of core ASD impairment domains from three to two is a modification of the original autism triad which combines deficits in communication and socialisation into a single domain (Durand, 2014). The social-communication domain is now monothetic (i.e., requiring that a person demonstrate symptoms across all three clusters within this domain to meet criteria for ASD). The restricted and repetitive behaviours domain has remained polythetic, (i.e., requiring evidence of symptoms in two of four symptom clusters within this domain) (Volkmar & McPartland, 2014). The inclusion of a two-domain model stems from arguments that communication difficulties may stem from more than delays in language and are often related to impairments in social functioning (Vivanti et al., 2013; Huerta, Bishop, Duncan, Hus & Lord, 2012).

Further changes within the two symptom domains have also been made. The DSM-5 introduced an additional criterion (i.e., unusual sensitivity to sensory stimuli) in the restricted and repetitive behaviour domain to reflect research demonstrating the prevalence of these behaviours within the ASD diagnosis (Grzadzinski, Huerta & Lord, 2013). Stereotyped language, which was previously classified as a feature of impaired communication, has been moved into the restrictive and repetitive behaviour domain (Vivanti et al., 2013). Additionally, whereas previous diagnostic criterion required a delay

in, or complete lack of, development in expressive language, this requirement has been eliminated in DSM-5 as research (e.g., Robertson et al., 1999; Matson & Neal, 2010) has shown that this characteristic is neither specific nor universal to individuals with ASD (Grzadzinski, Huerta & Lord, 2013). Several other DSM-IV symptoms (e.g., social & emotional reciprocity; developing, maintaining, and understanding relationships) have been retained in DSM-5, but their definitions have been revised in order to increase specificity (Volkmar & McPartland, 2014). Section 2.2 (pages 14-19) describes the specific deficits and behaviour patterns which most commonly fall within the two domains of impairment presented in the DSM-5 to guide ASD diagnosis.

Additional DSM-5 changes relate to the onset of diagnostic criterion. The DSM-IV required that ASD-based symptoms begin prior to the age of 3 years, whereas, DSM-5 criteria simply requires that symptoms begin in early childhood (Volkmar & McPartland, 2014). This caveat allows for diagnosis based on behaviours that may have been present early in a child's development but acknowledges that in some cases symptoms will not become evident until the child attends an environment in which demand exceeds his/her capabilities (Huerta et al., 2012; Grzadzinski, Huerta & Lord, 2013).

DSM-5 diagnostic criteria for ASD introduce a series of five specifiers, aimed at providing greater information about the current presentation of a person meeting criteria for ASD (Kim et al., 2014). A first specifier describes whether a known etiological factor (i.e., medical condition, genetic syndrome, or environmental exposure) is present (Mayes, et al., 2014). The second is a severity specifier which describes required level of support and impact on a person's levels of functioning separately for each domain of symptoms (i.e., social communicative and repetitive behaviours) (McPartland, Reichow & Volkmar, 2012). Severity specifiers range from levels 1 to 3, indicating a need for support,

substantial support, or very substantial support, respectively (Durand, 2014). The third specifier indicates the presence of intellectual impairment. The fourth specifier indicates whether language impairment is present and requires a description of both receptive and expressive language abilities Grzadzinski, Huerta & Lord, 2013. The final specifier indicates whether catatonia is present (Volkmar & McPartland, 2014). See Appendix A for the full DSM-5 criteria for the diagnosis of ASD.

2.2 Clinical Features of ASD

Of the two core impairment domains that define ASD, deficits in social interaction and communication are commonly the most obvious and disruptive to functioning (Durand, 2014). Those deficits occur in social reciprocity, non-verbal communication, and the initiation and maintenance of social relationships (Lord & Bishop, 2015). Individuals diagnosed with an ASD will experience some degree of impairment to all of these aspects and the extent of that impairment often prevents the acquisition of pivotal developmental behaviours (i.e., attention, persistence, interest, initiation, cooperation, joint attention and affect) fundamental to successful social interaction, engagement and learning.

Deficits in social reciprocity can manifest as unusual social approaches, decreased displays of affects, inability to start or respond appropriately during social interactions, poor joint attention, complete absence of facial expressions, and trouble adapting behaviour to different social contexts (Mundy, Sigman, Ungerer & Sherman, 1986).

Deficits in language and functional communication may be observed in the form of odd or limited non-verbal communication, and/or the lack of expressive language (Billstedt, Gillberg, & Gillberg, 2007). Even in the presence of some language abilities

individuals may experience deficits in attending to, or comprehending spoken language and can encounter difficulty in articulating their feelings or thoughts (Sappok et al., 2013). Language delay, lack of language, and peculiarities in spoken language are common in ASD and often represent parents' initial concerns. The important distinction between individuals with an ASD and those with other developmental or sensory disabilities, in relation to verbal communication impairment, lies in the presence of compensatory communication attempts. The latter group of individuals are observed to attempt to compensate for their poor verbal skills by using non-verbal means (such as gestures) to aid their capacity for communication. In contrast, such compensatory behaviour is absent, simplistic, or idiosyncratic in individuals with ASD. Further, those autistic individuals also experience difficulty in constructing speech utterances with sufficient, functionality and social directedness to ensure their communication is effectively comprehended by others.

Given the deficits individuals with ASD experience in regard to social reciprocity and communication, difficulties in relationship initiation and maintenance are likely to occur (Durand, 2014). The specific difficulties which appear to interrupt the capacity for relationship formation vary widely across individual on the autism spectrum and can include: minimal or absent displays of interest in relating to others, problems in interpreting other's actions and responding accordingly, difficulty comprehending the nature of social relations, difficulty in comprehending the intuitive or deductive hidden norms or meanings that govern relationships, failure to develop or demonstrate adequate empathy (Honey, McConachie, Randle, Shearer & Le Couteur, 2008; Wolf, 2004). These difficulties relate to broad abilities which, when absent, affect the individual's capacity to use the verbal and non-verbal social skills needed to connect with others (Durand, 2014).

This in turn can lead to poor relationship outcomes such as: failure to develop peer relationships appropriate to the child's developmental level, and lack of spontaneous seeking to share enjoyment, interests or achievements with others (e.g., by a lack of showing, bringing or pointing out objects of interest to the attention of others) (Weinstein, 2010).

The second impairment domain described under Criterion A of the DSM-5 (APA, 2013) as a requirement for ASD diagnosis relates to behaviours which are relatively repetitive, rigid or unusual (Durand, 2014). This criterion refers to four groups of behaviours: behaviour which is repetitive or stereotyped, strict adherence to functional and non-functional routines, strong fixations on certain objects or topics, and unusual responses to sensory stimuli (McPartland, Reichow, & Volkmar, 2012). There is the potential for overlap across these four groups of behaviours if the focus is placed on their *structure* or appearance but these groups can be clearly distinguished in the relation to the *purpose* each behaviour serves (Wing, Gould & Gillberg, 2011).

The term 'repetitive and stereotyped behaviour' encompasses a wide range of actions and movements which can vary depending on the age and functional ability of the individual (Weinstein, 2010). In contrast, stereotyped and repetitive motor mannerisms and persistent preoccupation with parts of objects appears to be more evident in younger children and individuals with comorbid intellectual disability (Smith et al., 2009; Mash & Wolf, 2013). These behaviours can manifest as simple repetitive patterns of movements such as hand flapping, rocking or finger flicking, but can also occur as more serious behaviours which can result in self-injury such as head-banging and eye-gouging (Gal, Dyck & Passmore, 2002; Durand, 2014). Repetitive and/or stereotyped behaviour can also manifest as persistent preoccupation with parts of objects that can be seen such as

spinning the wheels of a toy car or flicking light-switches, or repetitive use of words or phrases with no communicative intent (Smith et al., 2009).

Disproportionate following of routines describes what Kanner (1943) first identified as an ‘insistence on sameness.’ Individuals with ASD are more likely to rely on the adherence to specific, non-functional routines or rituals (Wing, Gould & Gillberg, 2011). Further impairment can arise from a preference for sameness and predictability, resulting in strict adherence to routine and anxiety over minor changes in the environment (Kashinath, Woods & Goldstein, 2006). Therefore, difficulties with minor changes in personal routine and resistance to even small changes in the environment can cause significant problems for these individuals and their caregivers (Turner, 1999; Mash & Wolf, 2013).

Individuals with ASD are also highly likely to display strong fixations on objects or topics in excess of ‘normal’ preoccupation (Mash & Wolf, 2013; Smith, Segal & Hutman, 2015). The difference between these normal behaviours and the fixations of individuals with ASD can be explained in terms of narrowness of focus, inflexibility, perseverance, and lack of social quality (Yerys, Hepburn, Pennington & Rogers, 2007; Honey et al., 2008). Further, for verbally-expressed fixations, once the individuals with ASD begin conversing on their topic of interest, they can resist switching to other topics even when other people are clearly not interested in what they are talking about (Prizant, 1996; Prizant & Wetherby, 1989). For fixations which are displayed via non-verbal motor movements, these individuals are observed to continue focusing on their interest even when required to engage in other tasks, possibly distressed or even agitated when interrupted (Dawson, 1996).

Clinical research (e.g., Baranek, David, Poe, Stone, & Watson, 2006; Tomcheck & Dunn, 2007) has shown that individuals with ASD are also likely to experience sensory hypo- and/or hyper-sensitivity across the visual, auditory and tactile modalities and that those sensitivities can be specific to certain stimuli (Baron-Cohen et al, 2009). While not every individual who has ASD demonstrates unusual responses to sensory input it is extremely common (Durand, 2014). Previous editions of the DSM made no mention of these atypical sensory symptoms as being necessary for the diagnosis of ASD, however, a growing awareness of how common, and challenging, sensory difficulties can be for these individuals has led to their inclusion in the DSM-5 (APA, 2013)

The heterogeneity of ASD has led to the conceptualisation of this disorder as occurring on a spectrum, in which the two core areas of impairment (social communication and social interaction plus repetitive and restrictive behaviour) are viewed as comprising separate dimensions in which all individuals can be placed upon a continuum of functioning (Szatmari, 2011). This variation in functioning has led some researchers (e.g. Ozonoff, Pennington & Rogers, 1991) to argue for recognition of individuals with more subtle symptom profiles and for greater differentiation of treatment approaches. Those researchers have also argued for assessment models to facilitate identification of any secondary impairments which might contribute to and exacerbate the disruptive influence of primary impairments. Within the context of diagnostic assessment for ASD conditions, the term ‘Primary Impairment’ refers to symptoms which fit the diagnostic criteria needed for formal diagnosis. However, while primary impairments are essential for correct diagnosis of ASD they do not account for the full range of features which impact functioning (Hus, Pickles, Cook, Risi & Lord, 2007). Features such as attentional difficulties and deficits in executive functioning are often associated with ASD

(Troyb, Knoch & Barton, 2011). While not required for diagnostic purposes these secondary impairments can exert a significant impact on an individual's ability to achieve goals and to cope with daily demands (Yerys et al., 2007). Ozonoff, South and Provençal (2005) maintain that it is these associated deficits which often cause distress for the individual and can become the principal focus of intervention. It is proposed that these associated deficits, particularly in executive functioning, contribute to inflexibility, rigidity and consequent distress over environmental change (Ozonoff, Penington and Rogers, 1991) and can in turn lead to behavioural difficulties and emotional or physical outbursts. Therefore, inclusion of *secondary* as well as *primary* impairments is central to understanding the inter-individual variation which exists in the autism spectrum.

2.3 Increasing Prevalence of ASD

The prevalence of ASD has escalated dramatically since the first published epidemiological study by Lotter in 1966 (Skellern, McDowell & Schulter, 2005; Scott, Baron-Cohen, Bolton & Brayne, 2002; Barlow & Durrant, 2011). In Australia, cases of ASD are rising at a pace that is virtually unprecedented (Williams et al., 2008; Williams, MacDermott, Ridley, Glasson, & Wray, 2008). According to the latest Australian Bureau of Statistics (ABS, 2012) the incidence of ASD in Australia has risen dramatically over recent years, from an estimated 64,000 cases in 2003 to an estimated 115,400 in 2009. In Western Australia, Glasson (2002) found that new diagnoses had increased twenty-fold when comparing the rate of new cases diagnosed each calendar year over a twenty year period. Baker (2002) suggested that in the ACT referrals based on suspected ASD had risen by two hundred per cent between the years of 1989 and 1997. In Victoria a study also found that over a 16 year period from 1986 until 2002 prevalence of ASD had

increased tenfold (Icasiano, Hewson, Cooper & Marshall, 2004). The most recent Australian prevalence study by the Australian Advisory Board on Autism Spectrum Disorders (2007) concluded that one in 160 children between the ages of 6 and 12 have been diagnosed with an ASD, however, more recent studies have estimated that this figure could now be as high as one in 100 (Centers for Disease Control and Prevention, 2012)

The increase in ASD prevalence reported in the Australia context follows a global trend (Grinker, Yeargin-Allsopp & Boyle, 2011) which is particularly evident in North America, Northern Europe and Asia (Chakrabati & Fombonne, 2005; Scott et al., 2002; Newschaffer et al., 2006). The current findings in North America by the Autism and Developmental Disabilities Monitoring Network (2012) have estimated the prevalence of autism conditions to be as high as one in 68 children. Likewise, studies in Asia have also indicated high numbers of individuals with an ASD with Kim et al. (2012) reporting prevalence rates as high as one in thirty-eight children albeit in high-probability groups. While there is contention regarding the accuracy of diagnosis (Williams, MacDermott, Ridley, Glasson & Wray, 2008) and the underlying factors precipitating the substantial increases in prevalence (Prior, 2003; Skellern, McDowell & Schulter, 2005) these trends do reflect the growing proportion of people actively seeking assessment, diagnosis and, most importantly, treatment for a suspected autism disorder (Scott, Baron-Cohan, Bolton & Brayne, 2002). Nonetheless, this escalation of individuals presenting with an ASD has led to an increased demand for specialised educational and other services capable of addressing their particular needs (Coleman & Gillberg, 2012).

2.4 Gender Differences in ASD

It is widely accepted that the incidence of people with ASD is higher in males than females, with average ratios estimated to be as high as 4:1 (Fombonne, 1999). However, there has been suggestion that this ratio is not indicative of the actual proportion of males to females on the autism spectrum (Whiteley, Todd, Carr & Shattock, 2010). More recent studies (e.g., Lai, Lombardo, Auyeung, Chakrabarti & Baron-Cohen, 2015) suggest that gender differences are more apparent with high-functioning cases of ASD with average male to female ratios recorded at 8:1; whereas, among individuals with a dual diagnosis of an autism condition and learning disability, the median male to female ratio is approximately 2:1 (Fombonne, 2003). These incidence rates suggest the presence of ASD phenotypes, as determined by current diagnostic manuals such as the DSM (APA, 2013) appears to be more evident in males (Russell, Steer & Golding, 2011).

Despite reports that ASD occurs more frequently in males, the literature suggests that there are no significant gender differences in symptom presentation according to the 'triad of autism impairments' model for identification (Volkmar, et al., 1993; Pilowsky, et al., 1998). However, debate exists on this issue as a separate line of research (e.g. Rivet & Matson, 2011; Volkmar et al., 1993) has indicated that the way in which this triad is conceptualised in relation to specific symptoms is biased towards identification in males. It has been suggested that females with ASD are less likely to present with overt symptoms, or that these externalising behaviours may be more likely (than in males) to have been conceptualised as intellectual impairment which then becomes the primary diagnosis. More recent studies, such as that by Carter et al., (2007) have found some gender differences in the developmental profiles of higher-functioning children, indicating that males displayed stronger verbal, motor and social skills than their female counterparts

whereas females demonstrated stronger skills in visual reception. Additionally, Holtmann, Boelte, and Poustka, (2007) have suggested that females are more likely than males to experience more social difficulties particularly among peer relationships although they indicate that this may be due to differing social expectations being placed upon females than same-age males. Those researchers contend that social difficulties in females are more likely to be viewed as part of normal female development and therefore not targeted for formal assessment. Russell et al., (2010) have claimed that findings such as these suggest a gender bias towards the identification and diagnosis of ASD in boys. They assert that this bias can lead to stereotyping by education professionals, clinicians and parents particularly when identifying children on the higher-functioning end of the spectrum.

2.5 Comorbid Conditions and ASD

There are a number of conditions which are comorbid with ASD (Coleman & Gillberg, 2012). With several recent studies (e.g. Simonoff, 2008) suggesting that other psychiatric disorders or developmental disabilities may be evident in over 70% of known cases with a diagnosed autism disorder. It is also reported that many individuals with ASD have more than one coexisting psychiatric disorder (Simonoff et al., 2008; Troyb, Knoch & Barton, 2011). Research findings indicate that Intellectual Impairment continues to be the most commonly reported comorbid disability with some studies suggesting up to 70% of children with ASD have a Full Scale IQ below 70 indicating the presence of below-average cognitive ability (Fombonne, 2003). Attention Deficit Hyperactivity Disorder (ADHD) has long been detected in individuals with ASD. Behaviours from all three major symptom clusters of ADHD are frequently observed in individuals with ASD (Volkmar &

Klin, 2005). Leyfer et al., (2006) suggest that despite these ADHD-related features having a sizeable impact on functioning they are likely due to impairments arising from autism-based conditions rather than constituting a separate disorder. Therefore, and with reference to diagnostic correctness, if a diagnosis of ASD is present then it is suggested that a separate diagnosis of ADHD not be allocated.

Recently, studies have shown an increase in comorbid mood and anxiety disorders in individuals with an autism condition (Troyb et al., 2011). Leyfer et al., (2006) found that, within their sample of 109 children diagnosed with ASD, 10% of children had ASD with comorbid depression with a further 14% falling just below the diagnostic threshold. These percentages were considered to greatly exceed those expected for same-age peers without a developmental disorder. The most recent Australian figures by Bitsika and Sharpley (2015a) have also demonstrated significantly greater prevalence of Major Depressive Disorder in children with ASD. Their comparison of two matched samples of males (aged 8-18) with and without ASD and found that, not only did ASD children experience depression at a significantly higher rate, they also demonstrated greater symptom severity than the non-ASD group. Anxiety disorders have also been reported to occur at a higher rate in individuals with ASD with some studies reporting comorbid rates of up to 84% (Muris, Steerneman, Merckelbach, Holdrinet, & Meesters, 1998). Of the anxiety-based disorders currently listed in the DSM-IV-TR (APA, 2000) Social Phobia, Separation Anxiety, Obsessive Compulsive Disorder and Generalised Anxiety Disorder have most commonly been identified in individuals with an ASD (Leyfer et al., 2006). This is demonstrated in a study by Bitsika and Sharpley (2015b) which investigated the prevalence of seven anxiety-based disorders in a sample of 140 Australian boys with and without ASD, and found significantly more boys with ASD who met the diagnostic

criteria for Generalised Anxiety Disorder, Specific Phobia, and Obsessive Compulsive Disorder.

Leyfer et al, (2006) have suggested that figures may actually underrepresent the number of co-existing mood and anxiety disorders, as individuals with moderate to severe autism impairment would not have the pre-requisite communication skills to accurately report on their experiences of anxiety. For this reason, anxiety disorders are more frequently diagnosed in higher-functioning individuals as they are more likely to be able to report on their anxiety symptoms with accuracy. Bistika and Sharpley (2015b) have also suggested that abnormal symptom expression due to ASD-specific impairments may hinder accurate diagnosis of co-morbid anxiety disorders.

Research into comorbidity indicates that individuals with ASD are more likely, than their neuro-typical peers, to show evidence of an associated neurological and/or genetic condition (Troyb,et al., 2011). This is especially the case for individuals with moderate to severe intellectual impairment (Coleman & Gilberg, 2012). Epilepsy is present in approximately 20-25% of cases (Lhatoo & Sander, 2001) with the highest rates among those most severely impaired by autism (Canitano, 2007). However, the rates of epilepsy in higher functioning ASD individuals are still commonly accepted as being higher than the general population (Taylor et al., 2000). Two peaks of seizure onset have been identified; the first being before the age of five years, and a second occurring during adolescence and associated with the beginning of puberty (Volkmar & Nelson, 1990). Epilepsy in individuals with ASD appears to be strongly associated with other genetic impairments particularly Fragile X syndrome and Tuberous Sclerosis (Zafeiriou, Ververi & Vargiami, 2007). Together these genetic conditions account for approximately 15% of cases of ASD where there is severe intellectual impairment (Troyb et al., 2011).

The presence of challenging behaviours, such as aggression, destruction, and self-injurious behaviour also affect the majority of individuals with ASD (Matson, Wilkins & Macken, 2008). Research indicates that having an ASD diagnosis predicts the presence of at least one challenging behaviour (Dawson, Matson, & Cherry, 1998; Hill, Powlitch, & Furniss, 2008; McClintock, Hall, & Oliver, 2003). Further, IQ and severity of ASD symptoms each carry a predisposing impact on challenging behaviours. Preliminary results suggest that the severity of ASD symptomology is related to the frequency, intensity, and number of challenging behaviours with higher prevalence rates seen in cases with more severe ASD features (Matson, Dempsey & Fodstad, 2009; Matson, et al., 2011; Rojahn et al., 2009). O'Brien and Pearson (2004) found an inverse relationship between the severity of challenging behaviour and the individual's IQ. Taken in sum, the picture is further confounded by the high level of comorbid psychopathology and other related disorders common to individuals with ASD, which can serve to further increase the likelihood of challenging behaviours (Crocker et al., 2007; Holtmann, et al., 2007; Matson, Boisjoli, Hess, & Wilkins, 2010; Matson & Shoemaker, 2010; Shattuck et al., 2007).

Chapter 3:

Disability Policy and Legislation in Australian Schools

3.1 Educational Service Provision for Individuals with ASD

It is well documented that individuals with ASD present both complex and demanding challenges for professional services (Boyd, Odom, Humphreys & Sam, 2010; Matson, 2007; McConachie & Diggle, 2007). The increased incidence of the disorder, has created substantial demand for specialised services to assist individuals with ASD in overcoming their specific barriers to effective functioning. Volkmar, Paul, Klin and Cohen (2005) suggest that in most cases the first-line of intervention for many individuals with ASD is provided by educational institutions. Costello et al., (1996) presented findings suggesting that up to 75% of children receiving mental health care or intervention were accessing this in a school setting whereas less than 25% were receiving care from the general medical care sector. Many studies (e.g. Bertrand et al., 2001; Yeargin-Allsop et al., 2003) have demonstrated similar findings showing marked increases in the number of students accessing specialised programmes within schools. In large measure, this is a result of the unique opportunities schools offer as those settings require teachers to dedicate a significant amount of time to their students in both structured and unstructured contexts. This sustained contact with students sets the conditions for in-depth assessment and intervention (Gresham, 2004). Consequently, the central professionals involved in assisting individuals with ASD are educators through an intensified responsibility in identification, assessment and treatment of these students (Hoagwood & Erwin, 1997).

Within schools, the predominant change to processes for delivery of ASD-specific student support has been the development of individualised curriculum through the use of curriculum-based assessments (Olley, 2005). Curricula adjustments are aimed at maximising the ability of students with ASD to develop necessary skills and knowledge during their schooling through structured and planned teaching interventions (Flick, 2011). However, researchers (e.g. Browder, 2001; Dunlap, Kern & Worcester, 2011) have suggested that only focussing on educational programmes which emphasise modified curriculum delivery methods is insufficient in maximising the therapeutic outcomes for students with ASD. Increasingly, schools are being required to adopt collaborative therapy-based approaches with students who are experiencing difficulty and develop comprehensive programmes aimed at both supporting the individual student's learning and developing the student's skills-based coping strategies (Sansosti et al, 2010). This represents a significant change from the narrow curriculum-based approaches which were almost exclusively centred on skill-building based on the assumption that those skills were central to successful adaptation to the demands of adulthood (Olley, 2005). Schools are now responsible for the development of programmes and interventions designed to create improvements in the overall functioning of the student by addressing: social skills and adaptive behaviour, reduction of problem behaviour, and creation of school-based management factors and structural elements to enhance positive student outcomes (Flick, 2011; Magyar, 2011). This has precipitated the introduction of clinically-validated intervention strategies, such as behavioural, social, and emotional programmes, into the classroom context (Whitman & DeWitt, 2011).

Educational institutions are not only responsible for the delivery of curriculum, but they also afford opportunities for social, cultural and emotional development (Lyson,

2002; Sugai et al., 2000). Jordan (2011) believes that this perspective of education embeds the school environment and educational experiences in a therapeutic role for counteracting some of the effects of ASD on student functioning. The requirement for delivery of services focused on education as well as therapy results in unique challenges for educators due to the variability in the cognitive profile and social functioning seen in students with ASD (Gresham et al., 2004). Mash and Wolfe (2013) have suggested that not only do students with ASD experience a wide array of autism-based difficulties but they are also likely to develop unique and demanding behavioural repertoires which, whilst possibly assisting these students to cope with classroom demand, can place strain on those around them. Volkmar et al (2004) infer that this is in part due to the inability of students with ASD to learn adaptive skills that are relatively commonplace for children and adolescents with typical development.

The increasing number of children with ASD attending mainstream schools has resulted in mounting pressure, via Education Department legislative and policy initiatives, for recognition of their individual needs and implementation of educational frameworks to address those needs (Sugai et al., 2000; Iovannone, Dunlap, Huber & Kincaid, 2003; Ingram, Lewis-Palmer & Sugai, 2005). As more children are identified with ASD, schools are facing significant budgetary and resourcing demands arising from the needs of those children for additional and specialised support. This increasing population is also prompting schools to re-examine their service models. At the same time, parents are requesting more and costlier services for their children. This pressure, currently evident in Australian schools, parallels a larger shift in education policy and research away from teacher-oriented models of learning towards student-centred pedagogies (Hubball & Burt, 2004; Jones, 2006). This pressure for specialised ASD education and support services has

shaped policy and legislation development in other countries such as the USA, with the requirements of those developments exerting some impact on the Australian context.

3.2 International Trends in the Development of Policy and Legislation

In 1975, the introduction of the Education for All Handicapped Children Act (EAHCA) in America represented a seminal legislative change which directed schools to become more inclusive of students experiencing behavioural, emotional, learning or developmental disorders (Katsiyannis, Yell, & Bradley, 2001). Prior to this legislation the majority of children with disabilities were withheld from mainstream schooling and those students who did attend this setting were unlikely to receive an education that met their unique needs (Abeson & Zettell, 1977). Following the civil rights movements of the 50s and 60s the U.S. Supreme Court was forced to review what was considered the denial of equal opportunity to children who were being excluded from schools. While legislative change had been imminent for some time it was the EACHA that precipitated the most significant changes to the responsibility of schools by requiring that Individualised Student Programmes (ISP) be developed to assist students with disabilities rather than placing responsibility on students to conform to pre-existing curriculum and educational standards (Lubetsky, Martin & Handen, 2011). This legislation also conferred the substantive right for those with disabilities and disorders to attend and receive public education (Simpson, Mendschenk & Heflin, 2011).

Further amendments in 1990 saw the EACHA evolve into the Individuals with Disabilities Education Act (IDEA). The IDEA represented a significant revision to the original legislative document with two major changes resulting in further and more specialised support for individuals with disabilities (Katsiyannis, et al., 2001; Kehm, &

Tiechler, 2007). The first change introduced a government funding programme that was enacted to assist in meeting the educational needs of students who met the criteria for diagnosis of a disability. This allowed for the development and provision of curricula and programmes which further facilitated the integration of students with special needs who had previously been excluded from mainstream schools (Quinn et al., 1998; Lubetsky et al., 2011). However, perhaps even more significantly, the IDEA required the implementation of a Functional Behaviour Assessment (FBA) the results of which would be incorporated in the development of an Individual Student Plan (ISP) for each student who needed educational adjustment (Katsiyannis et al., 2001; Eyer, 1998). While the EACHA emphasised inclusion via access to education, the IDEA re-directed attention to the development of meaningful and measurable programmes (Hendrickson et al., 1999; Yell & Katsiyannis, 2000). Further, the wide scale introduction of FBA shifted focus onto identifying and addressing contextual factors (i.e., environmental and organisational factors) that impeded students' access to learning (Peters, 2007; Conroy et al., 2002). This introduction of function-based assessment emphasised prevention of objectively-identified challenging behaviour by employing pro-active strategies such as: avoiding or adapting the circumstances that usually triggered that behaviour, and building alternative skills to assist the student in coping with triggering circumstances (Carr et al., 2002). Specific aspects of FBA which seek to remediate challenging behaviour via in-depth assessment and creation of tailored student-specific strategies have been further elaborated in Chapter 4 of this thesis.

Similarly, in Europe a legal directive affiliated with the European Union has been adopted which promotes equal opportunities within education for those with disabilities (Ebersold, Schmitt & Priestley, 2011). While most European nations had instigated

legislative change towards inclusive education (Quinn & Ebersold, 2008) the creation of the European Union's *Equal opportunities for people with disabilities: A European action plan* (2004-2010) created the means for supporting these changes. The central tenet of this action plan was a commitment to ensure that education and training systems of the European Union became accessible to all. The Academic Network of European Disability experts (ANED) was established in 2007 as a mechanism for monitoring and evaluating European laws and policies that affect disabled people with the express purpose of informing and supporting the development of legislation and policy within Europe to ensure adherence with the European Union Disability Strategy (ANED, 2008). In 2010 the European Union published the European Disability Strategy (EDS) (2010-2020) which further builds upon the concept of inclusionary policy to expand the quality and types of services afforded to students with disabilities. The EDS proposes that developing an inclusive education system is not only a matter of right. "*It is also a means of promoting education systems with an emphasis on achieving a common learning environment guaranteeing the presence, participation and achievement of equal outcomes for all learners, including those with disabilities*" (Ebersold et al., 2011 p. 17). While in the United States FBA is considered best practice, there is currently no obligation for its completion in European educational settings (Gresham, Watson, & Skinner, 2001). Despite this, sound research supports the contribution of FBA to the development of functionally-based intervention and suggests this process is a preceding and imperative procedure to the clinical treatment of children who display challenging behaviour (Gable, Park & Scott, 2014)

3.3 Development of Disability Legislation in Australia

International legislative changes in the US and Europe have also informed the evolution of educational reform in Australia. Legislation regulating the implementation of educational adjustment and individualised learning of students with disabilities is governed by state governments in Australia. However, federal legislation was enacted in the form of the Disability Standards for Education in 2005 which mirrored US policy in effectively enforcing the Disability Discrimination Act on schools that did not make the necessary adjustments to assist students with disabilities (Commonwealth of Australia, 1992). These federal guidelines were developed to ensure that individuals with disabilities (including those with ASD) are able to access and participate in education on the same basis as other students.

Within Australia, inclusivity of students with a disability is a requirement for all schools and teachers. However, as the Australian Research Alliance for Children and Youth (ARACY) (2013) suggests, defining inclusion in schools is difficult as it is not simply about allowing students with disabilities into mainstream schools but supporting them in such a way that they can succeed in their education rather than simply attend school. This is in line with UNSECO (2012) guidelines which suggest that schools must be ready to work towards the elimination of barriers to enable full participation in education. In order for these government guidelines to be effectively enacted in Australian schools, feasible frameworks needed to be established to assist educators in: identification of students with educational need, formal assessment to reveal the level of this educational need, and development of appropriate learning techniques to assist students (Kurth & Mastergeorge, 2009). However, despite reflecting international guidelines, Australia does not require the implementation of specific assessment

methodologies such as FBA. Instead, Australian schools acknowledge FBA via development of Responsible Behaviour Plans that recommend and can incorporate FBA functionally-oriented assessment, but do not require or mandate the use of such assessments. This in turn has placed pressure on schools themselves to establish structures to facilitate implementation of the required policy changes. In the United States, PBS and individual intervention plans have been designed and implemented through the use of a team of individuals spearheaded by a team-leader who has competence and expertise in FBA in accordance with their legislation (Quinn et al., 1998). This formal requirement for proficiency in delivery of FBA therefore became a substantial motivator for schools, educational and clinical professionals, and researchers to address the challenge of inclusionary teaching and to ensure appropriate educator training to close the gap between students with special educational needs and their non-disabled peers (Jordan, 2011). However, in Australia no such obligations apply, leaving PBS a process predominantly executed by educators with, at times, minimal input from trained professionals. However, classroom teachers are offered support and guidance via access to statewide behavioural consultants (i.e., Behaviour Adjustment Teachers) who can assist with setting up FBA structures, but as of yet FBA training has not occurred in any widespread manner. According to O'Neill and Stephenson (2010) “.... *it is likely that in-depth knowledge of FBA processes and training may remain limited to behaviour specialists and school counsellors*” (p. 66).

3.4 Inclusionary Legislation in Practice in Australia

The inclusion of children and adolescents with disabilities has resulted in educators being required to teach an increasingly heterogeneous group of students (Sugai et al.,

2000). In addition, these students are more likely to engage in challenging behaviour whilst in class, placing further demand on educators. Researchers (e.g., Sugai, Sprague, Horner & Walker, 2000; Taylor-Greene et al., 1997) have suggested that despite representing only 1-5% of the student population, students with disabilities can account for more than 50% of the behavioural incidents in schools. However, many schools lack the capacity to identify and address challenging behaviour in accordance with legislative requirements (Sugai et al., 2000). While inclusionary policies exist, there is evidence (i.e., Sharma & Deppler, 2005; McConkey & Bradley, 2010; Forlin, 2006) to suggest that these are not always translated into classroom practice. Sharma et al., (2013) submit that for policy reform to be successful and effective it requires significant changes to the ways in which education is provided to students with disabilities. Crucially, these changes depend upon teachers and other education personnel adopting and implementing this reform (ACARY, 2013). Successful implantation of policy reform and effective practice in inclusive education requires significant changes in the way in which education is provided to all students. Nickels (1996) contends that inclusionary education goes beyond the presentation of academic material. Supporting a student requires educators to recognise and reduce barriers that impede a student's access to learning through four broad types of change: educational adjustment, increasing social inclusion, addressing challenging behaviour, and providing skills to assist the student cope with environmental demand.

Further, a growing body of literature is suggesting that inclusion of systematic and individualised, classroom-based interventions based on established evidence-based practices is required to achieve the change that inclusionary education demands (e.g., Oliver, Wehby, & Reschly, 2011; Simonsen et al., 2008; Epstein, Siegel & Silberman, 2008). Classroom-based intervention can be defined as the specific actions teachers take

to create environments that support their students' academic, behavioural and social/emotional learning (Evertson & Weinstein 2013). Yet, criticism of teacher preparation in the area of classroom management and the development of classroom-based intervention has been increasing both in Australia (e.g. O'Neill & Stephenson, 2014; McKenzie, Rowley, Weldon & Murphy, 2011) and internationally (e.g., National Council on Teacher Quality, 2013; Johansen, Little & Akin-Little, 2011). This criticism is particularly relevant to the management of challenging behaviour within the classroom. Challenging behaviour is often considered particularly detrimental to the student who displays it and others in the learning environment by posing significant interference with students' academic achievement, adversely impacting classroom activities, and contributing to work-related stress among teachers (Närhi, Kiiski, Peitso & Savolainen, 2015). Based on available data about principals' satisfaction with the capabilities of graduates exiting general initial teacher education programmes in Australia, it appears that new graduates are not adequately trained in managing classroom activities, as only 30% of primary school principals and 27% of secondary school principals felt graduate teachers were well prepared in classroom management. In regards to understanding differences among students, only 26% of primary principals and 31% of secondary principals perceived that graduate teachers were adequately prepared (McKenzie et al., 2013).

Pre-service training of educators is often cited as being inadequate in providing beginning teachers with the skills and knowledge they need to address the difficulties associated with increasing student diversity and the necessity for specialised education approaches (Ashman & Elkins, 2011; O'Neill & Stephenson, 2013). While it has long been considered essential that educators are well versed in content delivery and the presentation of academic information, training regarding the selection and implementation

of appropriate, evidence-based classroom intervention has not been as large a priority (O'Neill & Stephenson, 2012a; O'Neill & Stephenson, 2012b). This in turn has contributed to a potential situation of service delivery-training imbalance whereby educators are required to develop classroom-based interventions aimed at facilitating student change yet the existing opportunities for front line educators to do so are primarily informational (Allen, 2010; Merrett & Wheldall, 1993). However, these informational opportunities are deemed unlikely to provide a solid basis for understanding and working with complex behaviour (Sugai et al., 2000). Studies which report on the paucity training opportunities to assist educators in remediating student behaviour also emphasise the necessity for more focused training models to ensure teachers are adequately prepared to provide better outcomes for their students (Stoiber & Vanderwood, 2008; Stoiber & Gettinger, 2011).

3.5 Legislative Impacts on Service Provision for ASD Students in the School System

Despite the potential advantages of inclusionary legislation in providing positive outcomes for students with ASD, simply having these students present in mainstream schools is unlikely to provide them with the skills to overcome the learning and social barriers which adversely impact upon their engagement in curricular activity (O'Neill & Stephenson, 2014). A cursory review of the current ABS (2012) statistics on inclusion of students with ASD into schools might suggest that the introduction of inclusionary legislation in Australia has been effective. These statistics indicate that 94% of school-aged children with ASD attended either mainstream or special education schooling, with the remaining 6% unable to attend school because of their disability. However these statistics do not adequately capture the challenges placed upon the mainstream schools which are dedicated to developing evidence-based structures for supporting students with

ASD in the classroom context. Closer inspection of data from the Australian Bureau of Statistics (2012) shows that 86% of students with ASD were found to be ‘having difficulty’ at school, principally in the areas of learning, communicating and social integration. The profile of difficulties commonly attributed to students with ASD (i.e., impairments in social communication and reciprocal social interaction plus presence of inflexible patterns of thinking and behaviour) are highly likely to lead to development of challenging behaviour that impacts on their capacity to perform at school. The behavioural challenges of students with ASD are often misunderstood and mismanaged because they differ greatly from those of their neuro-typical peers (Kennedy, Meyer, Knowles & Shulka, 2000). For example, they may be distressed by unexpected change, interruptions to narrow interests or obsessions, or sensory overload (Myles & Simpson, 1998). As they lack an understanding of social interactions, students with ASD are often vulnerable to social exclusion and bullying (Bitsika & Sharpley, 2014; Bitsika, 2012; Attwood, 2006). As adolescents become more aware of their inability to “fit in” socially, rates of anxiety and depression increase (Attwood, 2006). A survey of 173 families of children with ASD in mainstream schools by Whitaker (2007) found over 40% of parents to be concerned by the incapacity of school personnel to understand the reasons for their child’s challenging behaviours. Evidence suggests that students on the autism spectrum are significantly more likely than their typically developing peers to be suspended or excluded (Barnard et al., 2000). Further, they are over six times more likely to under-perform academically relative to their level of intelligence (Ashburner, Ziviani & Rodger, 2010). Unfortunately, Reichle et al. (1996) suggest educators may maintain several incorrect beliefs about students with disabilities which can lead them to ignore subtle low-level responses which precede and signal the onset of challenging behaviour. This in turn can lead to the continued application of classroom-based intervention which focuses on

reacting to rather than preventing challenging behaviour. Furthermore, Reichle et al. (1996) have reported that among teachers of children with disabilities in mainstream education settings the reason most frequently cited for returning children to more restrictive placements was the emergence or persistence of socially motivated, challenging behaviour.

The implications of poor school inclusion also extend beyond the school environment as these challenges are unlikely to exist solely in the classroom and school-yard. Several studies (e.g., Cappadocia, Weiss, & Pepler, 2012; Carter, 2009; Nansel et al., 2001; Hoover & Oliver, 2008) have demonstrated that students with ASD are significantly more likely to be bullied than their neuro-typical peers. The inability to fit in socially and being subjected to bullying has been strongly linked to increased mental issues in students with ASD (Bitsika & Sharpley, 2014; Bitsika, 2012; Autism Spectrum Australia [ASPECT], 2013). Further, reduced academic achievement and/or frequent school exclusion arising from poor school inclusion can lead to reduced capacity to successfully transition into adult roles such as tertiary education and training, and employment (Samuels, 2008). Several surveys (e.g., ASPECT, 2013; Oliver, 2008; Samuels, 2008) have suggested that the parents of students with ASD are significantly unlikely to believe that the education their children are receiving is enough to prepare them for life after school. Substantial disadvantageous outcomes such as these create a pressing need for training approaches which ensure that educators learn to understand the complex difficulties of students on the autism spectrum so as to create classroom-based interventions which enhance student engagement across curricula and social domains (ASPECT, 2013).

In Queensland, the Department of Education and Training (DET) provides access to a range of educational options for individuals with a disability comprising of

mainstream classrooms, special education programmes within schools, and special schools (DET, 2012a). For students who are included in mainstream schools, assistance through additional financial support may be provided through the application of student support services. These services are allocated through the Education Adjustment Programme (EAP) in which individual student profiles are assembled to determine the amount of student support allocated (DETE, 2013). Previously, accessing the EAP was conditional on the development and continued application of ISP, however, this prerequisite is no longer mandatory unless an ISP is being used to document decisions regarding a different year-level curriculum or for the student not meeting learning expectations (P-12 Curriculum Assessment and Reporting Framework, 2014). Principals are responsible for the resources provided to support educational programmes of all students in their school, including students with disabilities even in instances where those students might not meet EAP criteria.

While these current systems are aimed at narrowing the gap between students with disabilities and their non-disabled peers, there is a need for schools to look beyond providing resources for students with disabilities and to further refine specialised educational procedures and structures to effectively manage those students (Etscheidt & Curran, 2010; Moreno & Bullock, 2011). Optimising the capacity of schools to respond to challenging behaviour has been found to lead to significantly better student outcomes (Sugai et al., 2012). As evidenced in America and Europe, the adoption of FBA in schools closely aligns with inclusionary policy and can provide a framework for understanding and responding to such behaviour. The provision of FBA training would provide a basis for assisting teachers to gain the expertise needed to help their students.

Chapter 4:

Functional Behavioural Assessment

Functional Behaviour Assessment (FBA) serves as an evidential basis for developing proactive and comprehensive multi-element interventions to facilitate positive changes in the challenging behaviour of students with developmental disabilities such as ASD (Hanley, Iwata, McCord, 2003), cognitive impairments (Tasse, 2006), and behavioural disorders (Hendrickson, Gable, Conroy, Fox & Smith, 1999). Despite its aim of reducing the likelihood of challenging behaviour, FBA does not support usage of procedures designed to eliminate behaviour, instead its focus is on educating the student to respond differently when confronted with demanding situations. FBA also views the occurrence of challenging behaviour as a response to some adverse aspect of the social environment and incorporates contextual and situational changes to support positive rather than challenging responses. Therefore, FBA intervention incorporates three broad goals to support positive behaviour: student skill-development, environmental rearrangement, and refinement in others' interactional responses (Conroy, Clark, Gable & Fox, 1999).

FBA procedures distinguish themselves from traditional behaviour management methods by employing systematic and objective data-collection on specific target behaviours and the variables which impact these in the natural environment (Repp & Horner, 1999). Due to its data-collection processes, FBA assists in delineating behaviour-environment relationships in cases where students exhibit behaviour for which the cause cannot be easily determined. If applied by education personnel, these data-collection processes have the potential to assist them in understanding their ASD students' behaviour and provide them with an objective basis for remediating that behaviour in the classroom.

This process aims to implement established, behaviourally-based technologies derived from clinical settings in school environments with an emphasis is on employing empirically-validated treatment methodologies to assist in developing school environments that facilitate learning and minimise ‘problem’ behaviour (Carr et al., 2002). The core features of school-based FBA are: the integration of behavioural science, the use of practical behavioural interventions, the inclusion of non-curricula learning, and adoption of a holistic perspective of student issues (Sugai et al., 1999). These features are designed to provide students with the necessary supports to continue their education and become positively engaged in their schooling through the design and implementation of person-centred treatment plans (Johnston et al., 2006). PBS was initially designed as a school-based system predominantly based on Functional Analysis and adapts behavioural principles and procedures to: programme the environment, and support student participation, learning and social development (Magyar, 2011). In facilitating an understanding of emotional deregulation and problematic behaviour, the interventions developed are considered to be more individualised with emphases on prevention and acceptance of these student difficulties (Prizant & Wetherby, 2005).

4.1. Definition of Functional Behavioural Assessment

FBA is an assessment methodology derived from the operant learning theories developed by Skinner (Repp & Horner, 1999). The aim of FBA is to better understand the occurrence and maintenance of problem behaviour and how an individual responds to demand in the environment through the collection of objective behavioural data. Any conclusions about the problem behaviour and ways of addressing that behaviour are drawn from the data which then, in turn, provide the basis for building the skills needed to change unwanted responses. The focus when conducting a FBA is on identifying

significant social, affective, cognitive, and environmental factors associated with the occurrence (and non-occurrence) of specific behaviours (Repp & Horner, 1999; Cipani & Schock, 2007; Miltenberger, 2012). This broader perspective, which extends well beyond simply defining the topography and measuring the dimensions (e.g., frequency and duration) of behaviour, offers a better understanding of its purpose and explanations of why it occurs. The reasons for, or purpose of, behaviour are referred to as ‘functions’ and FBA aims to determine all significant behaviour-function relationships in generating explanations. Therefore, data-collection procedures are heavily focused on recording the outcomes of behaviour, to guide the observer’s attention away from simply describing the symptom (i.e., behaviour) to identifying the individual’s underlying motivation or drive for performing that behaviour (Iwata, Dorsey, Silfer, Bauman, & Richman, 1982; Carr, 1993). Examples of typical functions arising from difficult behaviour include access to a Tangible Item, access to a Preferred Activity, gaining Attention or controlling a social interaction, Escape or Avoidance of unwanted demands, and Biological or Sensory High (Hagopian, 2007). These functions provide educators with the means to develop individualised hypotheses about the functionality or purpose of difficult behaviour in order to develop needs-based treatment plans (Kohlenberg & Tsai, 1994; Hastings & Noone, 2005). In an educational setting, the identification of individual student needs refers to the process of setting priorities for future action which targets gaps in student performance. These gaps are determined following an examination of the nature and causes of student difficulty.

Due to the emphasis on developing function-based hypotheses about why difficult behaviour occurs, educational personnel can better intervene and develop individualised, needs-based treatment plans (LaBelle & Charlop-Christy, 2002; Cipani & Schock, 2007).

This method is congruent with a more ideographic approach to treating challenging behaviour arising from developmental disabilities (Durand & Carr, 1992; Bitsika, 2005) and moves away from standardised manualised treatment methods. Instead, educators are able to develop needs-based and student-specific interventions which have a higher likelihood of being effective as they distinguish individual needs and responses (Repp & Horner, 1999; Miltenberger, 2012). Additionally, the continued collection of objective, behavioural data during intervention implementation provides measurable outcomes which can determine the effectiveness of interventions and the accuracy of functional hypotheses about difficult behaviour, (Carr, 1977; Hastings & Noone, 2005).

4.2. History of FBA

The foundations of FBA are rooted in the development of Applied Behaviour Analysis (ABA) which occurred during the late 1950s and into the 1960s (Dixon, Vogel & Tarbox, 2012). The general discipline of ABA, in turn, is based upon the conceptual foundation of operant conditioning, first proposed by B.F. Skinner (1948). Skinner was also the first to use the term '*function*' when referring to the underlying causes of behaviour. However, despite this reference to causation, early applications of behavioural principles, such as reinforcement and punishment, to problematic behaviours often failed to acknowledge the factors which motivated occurrences of that behaviour (Mace, 1994). Early research in ABA attempted to reduce the frequency and severity of challenging behaviours and facilitate the acquisition of adaptive skills (Wilkins & Matson, 2009). While much early research demonstrated that mere management of behavioural consequences could effectively decrease challenging behaviours, behaviour analysts became increasingly concerned about unnecessary use of punishment-based procedures

(Dixon et al., 2012). Skinner and many early behaviourists warned that punishment would also entail undesirable side effects and that striving to promote control of behaviour through positive reinforcement as much as possible was a valuable goal in and of itself. In addition, the operant perspective assumed that different behaviours led to different functions for different people, and proposed that the same behaviour could result in multiple functions within the same person (Wilkins & Matson, 2009). Therefore a prior understanding of the varied or multiple functions of the behaviour would inevitably aid in designing an effective treatment. This belief was implicit from the beginning of ABA, but it was not until the 1960s that researchers began to develop procedures to directly identify and confirm the functions of challenging behaviour.

Two early studies were significant in advancing this concept that behaviour was ‘functional’ (i.e., served a purpose) and capable of being understood, predicted, and replaced by alternative positive responses. A study conducted by Lovaas, Freitag, Gold, and Kassorla in 1965 represented the first attempt to investigate problem behaviour by determining its possible functions by manipulating the consequent variables which followed instances of that behaviour. That research team investigated the function of self-injurious behaviour in a child with schizophrenia via an experimental procedure to demonstrate the patterns of the child’s self-injury in the presence and absence of sympathetic comments. Bijou, Peterson and Ault (1968) extended upon these procedures by developing specific guidelines for translating experimental techniques employed in the laboratory for application in the field. Their contribution was crucial in translating laboratory-based procedures to aid application of those procedures in clinical and naturalistic environments without sacrificing the rigour required of valid behavioural experimentation.

However, it was Carr (1977) who promoted a system in which interventionists would develop hypotheses to account for the conditions that maintained problem behaviour and then select treatment strategies on the basis of those hypotheses. This shift in focus to understanding the operant function of behaviour before treating it marked a major evolution in ABA, but it could not have been possible until standardised experimental assessment procedures had been published. Carr (1997) extended upon Skinner's (1948) early assertions about function and stressed the importance of identifying contextual events which were '*functionally related*' to behaviour and used the presence of these events to suggest that difficult behaviour occurred in response to an adverse (from the individual's perspective) aspect of the environment. This notion was significant as it proposed that undesired or difficult behaviours occurred because they assisted the individual to cope with environmental demand. The shift of focus to the functionality of behaviour is exemplified by Carr (1993, p. 48) who asserted that under this framework, investigations of behaviour were not actually about behaviour:

"...true behavior analysts have, paradoxically, very little interest in behavior [sic]. Thus, knowing that a young boy diagnosed as autistic exhibits self-injury is, by itself, not very interesting. What is interesting is why self-injury occurs (i.e., of what variables is it a function.)"

This tacit dismissal of examining the topography of behaviour suggested that simply describing the structure of behaviour, is not as important as understanding what maintains that behaviour. In the context of challenging behaviour, this is a recognition that understanding how this behaviour assists an individual to cope with the demands of their environment is more significant than categorising or defining the behavioural difficulty itself. This proposition from Carr (1993) was advanced by a number of key studies (e.g.,

Schlinger & Blakely, 1994; Gresham, Quinn & Restori, 1999; Miltenberger, Fuqua & Woods, 1998) which shaped FBA technologies into what they resemble today. None of these studies, however, were more influential than Iwata et al's., (1982) seminal study "*Toward a Functional Analysis of Self-Injurious Behavior*" which provided strong evidence to support the position that particular topographies of challenging behaviour do not have singular causes but, rather, are learned behaviours that differ in their relationship to environmental events, depending on the unique learning history of each individual. This paper was significant because it provided a set of practical procedures for identifying the environmental contingencies responsible for maintaining behaviour and understanding the functions of that behaviour tailored to clinical settings. Prior to the Iwata et al (1982) there was no solid basis to aid the systematic examination of behaviour in clinical settings where experimental control could not be maintained. This paper marked the beginning of what was later termed 'Functional Behaviour Analysis' and provided a format for conducting experimental analyses of the functions of challenging behaviour across a variety of settings such as treatment clinics, residential homes, and schools.

However, despite the progress made in moving FBA out of the laboratory into other settings, the initial translation process did not go smoothly and was criticised (Miltenberger, 2012). Iwata et al's (1982) process focussed heavily on the analogue manipulation of environmental stimuli thought to contribute to the occurrence of the challenging behaviour (Repp & Horner, 1999). The systematic manipulation of these variables created an experimental framework, whereby the clinician could confirm or deny hypotheses about function based on the presence or absence of the target behaviour. Much of the criticism has centred on the need to decontextualise the experimental environment in order to achieve the required conditions for the analogue manipulations

associated with functional analyses (Repp & Horner, 1999). While this provides an ideal platform for experimentation, it does not adequately reflect the myriad of contextual factors which may influence behaviour and creates a disconnection between controlled laboratory experimentation and assessment in the natural context, leading to difficulties in applying laboratory-based procedures in applied settings such as schools. Furthermore, the vast majority of clinical and educational professionals do not have the time, resources or expertise to use such experimental procedures (Dixon et al., 2004). In response to this criticism, FBA has been refined and tailored to the particular conditions which exist in non-laboratory contexts and increasingly represents a set of practical procedures to measure challenging behaviour, identify the factors which increase its likelihood, and develop an hypothesis on its functions without the necessity for manipulating consequent factors in order to confirm proposed functions. In light of the resource-intensive and specialised nature of Functional Analysis experimentation, it is not surprising that more recent clinical researchers are increasingly proposing that FBA is more suited to investigating the challenging behaviour which occurs in the school setting (Desrochers et al., 1997).

4.3. Effectiveness of FBA in Relation to ASD and Challenging Behaviour within School Settings

Prizant and Wetherby (2005) assert that the use of FBA in understanding problem behaviour in school environments is now considered to be best-practice. Newcomer and Lewis (2004) suggest that the attractiveness of FBA to educational institutions stems from the preponderance of research studies that highlight the effectiveness of treatments developed following function-based assessment. Since the changes to the IDEA and the escalation of PBS usage there has been a growing body of literature supporting the use of FBA in schools (Sasso, Conroy, Sticher & Fox, 2001). This growth has also been

attributed to the increase of national and international organisations endorsing FBA as a preferred methodology to identify and address the individual needs of students (Scott et al., 2004). FBA is expounded as an effective, evidence-based therapeutic framework for remediating challenging behaviour and developing needs-based interventions to assist students in adapting to and coping with the rigours of mainstream schooling.

When applied to school environments FBA has largely been employed with groups of students identified with behavioural and/or emotional disorders (Sasso, Conroy, Stichter & Fox, 2001). Within the school context, FBA has been shown to be particularly effective in addressing the behaviour of individuals with ADHD (Ervin, Dupaul, Kern & Friman, 1998; Reid & Maag, 1998), ODD (Kearny & Silverman, 1990), emotional disturbances (Lane, Umbreit & Beebe-Frankenberger, 1999), and general disruptive behaviours (Broussard & Northup, 1995). There is also ample evidence for the effectiveness of FBA techniques in assisting individuals with neuro-developmental disabilities such as ASD. FBA has long been considered a viable process for development of effective needs-based interventions for students with ASD (Hanley, Iwata & McCord, 2003; Delfs & Campbell, 2010). In particular, FBA has been used to address the challenging behaviour(s) exhibited by individuals with ASD which can prevent them from effectively accessing the school environment. Virues-Ortega and Haynes (2005) suggest that this is largely due to the ability of FBA to identify the precursors and maintaining variables for a wide range of presenting problems. FBA assessments have been demonstrated to be effective in assisting stereotypical behaviour (Wilke et al., 2012), tantruming (Repp & Karsh, 1994), precursor behaviour (Najdowski et al., 2008), communication difficulties (Carr et al., 1994), social skill deficits (Gresham, 1998), and adverse responses to changes in routine (Frea & Hepburn, 1999). Notably, FBA has

demonstrated effectiveness in remediating behaviours commonly seen as a basis for resisting change such as aggression, (Matson & Minshawi, 2007), violence (McIntosh, Brown & Borgmeier, 2008), and self-injury (Iwata et al., 1994).

The ability for FBA procedures to be applied to a range of presenting problems and disorders, particularly those viewed as exceptionally challenging, alongside its increased focus due to legislative changes have led to an upsurge of studies measuring the effect of FBA specifically in schools and classroom environments (Magyar, 2011). Overwhelmingly, these studies have suggested that FBA techniques are capable of providing the assessment information necessary for making meaningful treatment plans (Scott et al., 2004).

4.4. Best Practice Implementation of FBA in School Settings

The functional approach to behaviour assessment has several key advantages over other generic or manualised behavioural assessment approaches. Primarily, these advantages stem from acknowledgement of the idiosyncratic and dynamic nature of behaviour as well as the highly individualised outcomes that can be achieved through performing that behaviour (Kohlenberg & Tsai, 1994; Kohlenberg et al., 2004). In order to accommodate the changeability in behaviour, FBA has been designed to be a flexible and adaptive process which accounts for variability in the presentation of behaviour across environments and over time. FBA is best described as: (1) a collection of assessment techniques that are used to gain information on individual behaviour, antecedents, and consequences in order to determine the function of behaviour (Gresham, Watson & Skinner, 2001) and (2) subsequent behavioural intervention plans which attempt to modify

challenging behaviour and/or provide replacement behaviour based on the data collected (Witt, Daley & Noell, 2000). As such, FBA can be conceptualised as a process which employs a multi-method strategy in which the assessment procedures implemented are tailored to suit individual needs, environmental restrictions and available personnel (Repp & Horner, 1999). However, despite the use of multiple assessment methods, a distinct framework is applied to provide structure and integrity to the data-collection and data-analysis process. Neitzel and Bogin (2008) outline a number of steps which they consider to constitute best-practice in school-based FBA application aimed at creating individualised student support programmes. Those steps are as follows:

1. Creation of a behavioural definition that is concrete, observable and measurable.
2. Data-collection through the following means;
 - a. Indirect methods (e.g., social histories, first-line interviews).
 - b. Direct methods (e.g., direct observations)
3. Analysis of behavioural data through the identification of the antecedent and consequent events which relate to occurrence/non-occurrence of behaviour.
4. Formulation of functional hypotheses
5. Development of positive behaviour support plans and interventions
6. Evaluation of positive support plans and interventions through continued data-collection.

This FBA format is consistent with those outlined in the research literature (e.g., Repp & Horner, 1999; Kern & Dunlap, 1999; Gresham, Watson & Skinner, 2001). However, it is important to note that the application of FBA is considered a reflexive process in that, based upon the behavioural trends identified, it is possible to return to

previous steps in order to gain a better understanding of the behaviour. Repp and Horner (1999) suggest that this process should continue until it has produced three distinct outcomes:

1. An operational definition that accurately describes the challenging behaviour;
2. A prediction of the times and situations when the challenging behaviour will, and will not, occur based upon trends identified in the data sets; and
3. A definition of the functions that the challenging behaviour produces for the individual.

These outcomes can then be used to identify teaching and intervention strategies to be used in a positive behaviour support plan.

The challenge for schools is that, despite consisting of a skeleton of guidelines that must be employed for integrity to be maintained, FBA has evolved into varying processes which are suited to particular presenting problems, personnel training and/or expertise, and contexts. This in turn creates interest in the methods the educators implement to ensure adherence to FBA guidelines when addressing the challenging behaviour of students on the autism spectrum, and how they interpret the guidelines to fit within their own educational practice and school context.

Chapter 5:

School-Based Functional Behaviour Assessment for Students with ASD

5.1 Translation of Functional Behaviour Assessment to Create “Best Fit” Procedures for School Contexts

Despite significant evidence suggesting FBA-based behavioural interventions can be effective in reducing challenging behaviours (e.g., Ervin, Kern, Clarke, Dunlap, & Friman, 2000; Heckaman, Conroy, Fox & Chait, 2000; Kern, Hilt, & Gresham, 2004); Lane, Umbreit, & Beebe-Frankenberger, 1999; Reid & Nelson, 2002; Sasso et al., 2001), concerns have been raised about the use of FBA in regular school settings (Gresham, 2003; Reid & Nelson, 2002; Sasso et al., 2001). FBA is considered to be a respectful, person-centred approach that informs the selection and implementation of behavioural interventions, which in turn aim to enhance an individual student’s adaptive functioning in their current school context via skill building and development of positive replacement behaviours (Bambara & Kern, 2005). Intervention strategies are matched to perceived functions through the use of a data-driven team-based problem-solving approach that includes individuals who have contextual knowledge of the student, and an understanding of behavioural theory (Benazzi et al., 2006). A growing body of literature (e.g., Alberto & Troutman, 2009; Bambara & Kern, 2005; CECF, 2001; Crone & Horner, 2003; Kerr & Nelson, 2006; O’Neill et al., 1997; Watson & Steege, 2003) now exists to guide practitioners in applying FBA processes in school environments with efficiency and positive effect.

The ability for FBA procedures to be applied to a range of presenting problems and disorders, particularly those viewed as exceptionally challenging, coupled with the

legislative changes discussed in Chapter 3 have led to an insurgence of studies designed to measure the effect of FBA in schools and classroom environments and create guidelines for the school-based application of these assessment processes (Magyar, 2011). Overwhelmingly, these studies have suggested that FBA data-collection techniques are capable of providing the assessment information necessary for creating meaningful, individualised treatment plans. However, despite the perceived practicality of the FBA research there is a lack of clarity regarding the actual application of FBA procedures to deal with the behavioural difficulties experienced by students in classrooms and wider school contexts (O'Neill & Stephenson, 2010). One of the main points of contention is how best-practice FBA procedures are translated by trained researchers and/or behavioural specialists for education personnel who would not be expected to possess specialised FBA knowledge. As such the espoused effectiveness of FBA consistently represented in the research may not actually be reflective of the application of these assessment procedures by educators in schools.

The Individuals with Disability Education Act (1997) appears to have led to widespread training in FBA in the USA as well as the inclusion of specific frameworks for the application of FBA processes, however, the same has not occurred in Australia where no such federal mandate exists. Furthermore, in most Australian states no specific minimum training requirements currently exist for those educators who undertake FBA (O'Neill & Stephenson, 2010). This lack of training requirements coupled with fewer specific guidelines for the application of FBA procedures raises questions relating to how FBA is being translated for use in schools in Australia. Ingram, Lewis and Sugai (2005) have suggested that it is the ability of FBA procedures to develop quantifiable measures and testable hypotheses about problem behaviour that has provided the basis for

researchers and clinicians to accept FBA as a valid and effective assessment. However, Fox, Conroy and Heckaman (1998) have contended that it is the idiosyncratic nature of these same FBA procedures which creates the need for highly-trained educators to reflexively tailor assessment techniques to the individual and their targeted behaviours and to interpret the subsequent data-sets obtained. In Australia, a consultative model exists which requires external professionals (e.g., Behavioural Adjustment Teachers) to enter a school to oversee and conduct FBA processes (O'Neill & Stephenson, 2011). Based on this model, it is likely that in-depth knowledge of FBA processes and training may remain limited to behaviour specialists and school counsellors in the foreseeable future. Interestingly, these education personnel carry large caseloads across a number of schools and this can restrict their capacity to initiate the consultative process in a timely manner. Further, the consultative model, is considered to be cumbersome and there is little evidence to suggest that it is more effective than having school-based personnel with practical training to conduct FBA (Scott & Nelson, 1999; Repp & Horner, 1999). This dependence upon external consultants to implement FBA can be especially deleterious to students with ASD who are more likely to display high intensity challenging behaviour which requires a timely as well as systematic assessment to prevent escalation of difficulties. To overcome these difficulties, it would be beneficial to train first-line personnel such as classroom teachers and teacher aides in FBA to help them deal with immediate student problems as well as learn a process which would apply with future students and different contexts.

5.2 Evidence of Barriers to the Translation of FBA into Australian Schools

A number of challenges hinder the provision of high-quality training to educators, which in turn impacts on the ability of schools to build capacity in implementing and monitoring FBA for their students with disabilities such as ASD (Conroy, Katsiyannis,

Clark, Gable and Fox, 2002). Furthermore, Carr and Carlson (1993) contend that, while many of the current FBA processes for assessment and collection of behavioural data have a sound theoretical basis, there are difficulties in the practical application of these processes in the school environment. These difficulties may stem from a significant mismatch between educators/school environments and (1) the abilities and qualifications of the personnel used in studies and (2) the simulated experimental conditions often used in the research. Sasso, Conroy, Stichter and Fox (2001) criticise the lack of studies which accurately reflect the naturalistic school environment or include student participants of varying levels of functioning and demand. This discrepancy between research and applied (school) contexts is critical as the educators who work with students with ASD are often asked to apply FBA procedures that, despite demonstrating integrity in the research, might not fit well with their classroom causing those procedures to offer little clarity on the particular concerns educators hold for their students. This reported incongruity between the results from the theoretical research and the inconsistent capabilities of personnel responsible for implementing these FBA procedures calls into question the applicability of research-derived procedures and their capacity to accurately measure the 'real life' conditions and behaviours which occur in a dynamic classroom environment.

Researchers (e.g., Scott et al, 2004; Ingram et al., 2005; Newcomer & Lewis, 2004) have identified five barriers that can prevent the effective application of FBA to the difficult behaviour of students with ASD in the school context: (1) complexity of FBA procedures, (2) complexity of student behaviour, (3) poor links between assessment and intervention (4) discontinuity in monitoring of functional assessment processes and effects, and (5) lack of trained practitioners capable of interpreting behavioural data.

These barriers are further elaborated in the discussion presented in Sections 5.2.1 to 5.2.4 below.

5.2.1 Complexity of FBA Procedures

One of the greatest strengths of FBA is that it uses pre-existing, empirically sound treatments and matches them to treatment needs through evidence-based assessment protocols. When utilised effectively, these assessment processes are a valuable method for collecting comprehensive data sets that can assist in understanding and subsequently matching behavioural change goals, environmental modification and planned access to ‘functions’ as reinforcers of alternative positive behaviour to assist the individual cope with demand (Spiegler & Guevremont, 2010). FBA procedures have their roots in functional analysis methodology which is predominantly an experimental design used to create causal links between environmental factors and unwanted behaviour (Kates-McElrath & Axelrod, 2008). While behavioural assessments themselves are not quite as meticulous and precise as functional analyses, they do require in-depth data-collection to facilitate development of hypotheses regarding the functionality of the behaviour in question (Quinn, et al., 1998; Sasso, Conroy, Stichter, & Fox, 2001; Newcomer & Lewis, 2004). This form of comprehensive functional assessment is reported to be a costly process in terms of both time and resources. Northup et al., (1994) have suggested that educators often raise the objection that FBA processes will be too time consuming and tedious, especially when considering their use within school contexts with multiple demands for student education and support.

In seeking to address the labour-intensive nature of FBA, Dunlap and Kinciad (2001) have argued for educators to match the intensity of functional assessment to the level of behaviour change required. This recommendation has led to abbreviated FBA data-collection formats thereby making them more accessible in school environments (Repp & Horner, 1999). This is not a trend solely occurring in FBA but has been applied to a range of different theoretical frameworks and treatment methodologies (Kahng & Iwata, 1999). However, there is evidence that in school settings this abbreviation of FBA has simply led to streamlining by removal of key application steps or through overemphasis on indirect assessment measures. These abbreviated methods have been shown not to uphold the integrity of FBA application guidelines, contributing to a reduction in the accuracy and intensity of assessments, by providing insufficient data to create logical and valid hypotheses on the functions of behaviour (Lerman, Hovanetz, Strobel & Tetreault, 2009). Importantly, this type of FBA abbreviation puts at risk the detailed investigation of behaviour necessary for effective intervention planning and resembles the informal assessment processes that FBA was espoused to offset. Ervin, Fuqua and Begeny (2001) point out that without a structured methodology to identify the maintaining variables of behaviour, any subsequent intervention strategies will be inherently flawed. They suggest that this type of inadequate assessment will result in an over-reliance on reactive strategies aimed toward response-deceleration. Such strategies have been demonstrated as being doubtful to work for the majority of students as they are unlikely to override current reinforcers for the behaviour (Repp & Horner, 1999), particularly if these reinforcers are internal (i.e., escaping an anxiety state).

This issue of insufficient assessment is particularly pertinent to students with ASD, as these students are more likely to present atypical behavioural profiles, which have been

found to be less responsive to generic, reactive intervention strategies (Durand, 2014). Taking into consideration Dunlap and Kincaid's (2001) recommendations this would suggest that in matching the level of assessment to the needs of students, the assessments employed for students on the autism spectrum would need to be intensive and/or varied to aid understanding of complex behaviour and possibly subtle or idiosyncratic reinforcers.

5.2.2 Complexity of Student Behaviour

An important advance in applications of more recent FBA is the broadening of the pool of behavioural events which are considered to constitute targets for assessment and subsequent intervention (Repp & Horner, 1999; Miltenberger, 2012). The acknowledgement of covert behaviours as being important to individuals' functioning was first made by Skinner (1977) who defined covert behaviour as consisting of internal or 'private' events such as cognitions, emotions and physiological responses. Miltenberger (2012) contends that understanding covert behaviour is essential in the creation of individualised definitions of target behaviour. The identification of changes and shifts in covert behaviour is also essential in the creation of functional hypotheses and identification of maintaining factors for complex behaviours (Dunlap, Kern-Dunlap, Clarke & Robbins, 1991).

Despite the initial acknowledgement of the importance of covert behaviour, the focus in the research has been on investigating predominantly environmentally- and socially-mediated behaviours (Iwata et al., 1982). This focus has excluded changes in internal state because these do not represent behavioural events which are directly observable and measureable (Bitsika, 2005). Reluctance to target internal events in the

FBA process risks creating a bias in the data collected during assessment leading to non-recognition of important functions arising from shifts in internal state which can often occur concurrently with more overt changes in social interaction or environmental factors (Virués-Ortega & Haynes, 2005). This can also lead to the omission of low-level or precursor behaviour which signals difficulty in coping with demand and a possible escalation of behaviour (Nadjowski et al., 2008). Significantly, the identification of low-level precursor behaviour is even more difficult for individuals with ASD. Researchers (e.g., Iovannone, Dunlap, Huber & Kincaid, 2003; Barnard, 2002) have emphasised that the internal and non-observable difficulties (e.g., confusion, frustration) which characterise ASD can have a significant impact on the presentation of students' learning and social responses in the classroom environment. Subsequently, it can be the inability to recognise these covert or low-level behaviours that leads to an escalation of 'inappropriate' behaviour that in turn forces schools to take action against students.

Clarity on the associations between behaviour and its functions is paramount to understanding the conditions under which that behaviour is most likely to reoccur. The initial conceptualisation of a single association between *one* behaviour and *one* function is being challenged by researchers who argue that it is more accurate to view behaviour as 'multi-functional' and capable of serving numerous functions (Day, Horner, & O'Neill, 1994; Kennedy, Meyer, Knowles & Shukla, 2000). This multi-functional nature of behaviour contributes to its complexity and challenges the majority of existing FBA processes which have been designed to determine one or (at best) three possible functions for one target behaviour (Iwata et al., 1990). These FBA processes do not offer a solid basis for investigating the behaviour of students with ASD, who are known to have restricted behavioural repertoires, which can cause the same behaviour to succeed in

serving multiple functions which are evident singly or in combination depending on the context and level of demand. There is now increasing evidence to suggest that multifunctional behaviour impacts on the capacity for accurate implementation of FBA leading to the possibility that current assessment techniques provide an insufficient basis for fully capturing the range of reasons for why a particular behaviour continues to occur (Day et al., 1994; Smith, Iwata, Vollmer, & Zarcone, 1993; Kennedy, Meyer, Knowles & Shukla, 2000). This lack of clarity on functions might also explain why, in some cases, functional assessment on the same behaviour produces anomalous or disparate results (Smith et al., 1993; Day et al., 1994; Shukla et al., 2000). Day et al. (1994) have commented that the paucity of research into methods for identifying multifunctional behaviour is most likely not due to the low prevalence of such behaviour, but could be attributed to the difficulty inherent in identifying and adequately treating multiple functions, or behaviour that changes in purpose across contexts and time. Complications such as these are reported to result in the requirement for more labour-intensive assessment and multi-component treatment development, and this could contribute to the paucity of formal investigations into multifunctional behaviour in applied contexts such as schools (Iwata et al., 1994).

5.2.3 Poor Assessment-Intervention Links

At its core FBA is a process involving in-depth assessment and interpretation of data to identify the functions for particular challenging behaviours, and then develop individualised interventions based on conclusions drawn from that data interpretation (Dunlap, Dunlap, Clarke & Robbins, 1991). Functional assessment procedures seek to

identify maintaining variables and stimulus conditions that influence the occurrence of targeted behaviour with an aim to using that information to implement meaningful, individualised treatment methodologies. It is argued that if the FBA process results in assessment only or in interventions which are not linked to assessment results, then a formal FBA has not been conducted (Noell, Gresham & Duhon, 1998). Gresham et al., (2004) indicate that while data-driven intervention is a key objective of FBA, the majority of interventions which arise from functional assessment rely heavily on administration of strong reinforcers or punishers to override the maintaining conditions for difficult behaviour. While this form of behaviour modification, which is generic in nature, can at times be successful it begs the question as to why in-depth functional assessments are carried out if the gathered data are not utilised for intervention planning.

Despite FBA distinguishing itself as an effective means of systematically and objectively constructing needs-based interventions, Gresham et al, (2004) found that most school-based interventions implemented after FBA focus on reacting to behaviour instead of using proactive strategies to reliably manipulate antecedents to make difficult behaviour less probable or less detrimental. This is not an isolated discovery as many researchers (e.g., Mortenson & Witt, 1998; Noell et al., 2000; Noell, 2008; Sasso et al., 2001) have reported on the same finding suggesting that poor links between assessment data and chosen interventions occur within school contexts. This suggests that, without sufficient familiarity with the entire FBA process, educators can tend towards implementing interventions with a poor evidential basis and a reduced likelihood of being effective in aiding students cope with the demanding situations that are provoking their challenging behaviour (Hagermoser, Sanetti & Kratochwill, 2009). Furthermore, the poor assessment-intervention link discussed in the research implies that, for many first line educators who

are under pressure to remediate their students' behaviour, understanding why difficult behaviour is occurring is of secondary importance to modifying that behaviour and implementing interventions quickly.

5.2.4 Discontinuity of FBA Data-Collection Following Initial Assessment

Horner (1994) has described FBA as an ongoing process which should not be viewed as a “*one-time event*” (p 402). The continued collection of behavioural data in order to monitor the implementation and success of treatment is a well-established requirement of FBA (Sugai, Lewis-Palmer, & Hagan-Burke, 2000). Specifically, this phase of the assessment process is required to ensure the effectiveness of interventions and provide tangible information regarding the ability of those interventions to meet treatment goals (Miller, 2006). Stoiber and Vanderwood (2008) assert that “*measuring a student's response to an intervention accurately requires data about that student's performance prior to the intervention (i.e. baseline data) and either during the intervention (i.e., progress-monitoring data) or subsequent to a period of intervention (post-intervention data)*” (p 265). Magyar (2011) highlights the increased need for educators to utilise data-based interventions and to be able to effectively evaluate their success. One of the greatest strengths of FBA is its capacity to provide functionally-based hypotheses which can be tested and evaluated throughout the intervention phase to guide successful treatment outcomes (Repp & Horner, 1999).

While the process of collecting data throughout intervention is heavily grounded in FBA literature, there is evidence to suggest that it is as highly valued in school

environments (Fox & Davis, 2005). Again the issue of funding and resource restrictions can mean that continued data-collection to monitor student progress might not be feasible or desirable in the school context – especially when interventions appear to be successful. Sasso et al., (2001) suggest that the propensity for teachers to engage in subjective analysis of treatment results when evaluating intervention success is considered to be a major drawback in school environments. The main disadvantage of discontinuing assessment and data-collection follow-up is that any inferences as to whether the intervention strategies are successful become supposition due to lack of supporting evidence. Sasso et al, (2001) further purport that those education personnel who chose not to follow best-practice FBA guidelines, due to perceptions of the techniques being time-consuming and ineffective, were often creating greater demand on resources in the long-term.

The lack of continued monitoring can prevent an educator from determining if and how the behaviour (targeted for remediation) might have become adaptive and possibly associated with new functions not identified during an initial assessment (Sugai et al., 2000). This can be evidenced at times when factors change within the students' life or events occur and force the student to adapt their behaviour in order to gain access to the functions that assist their coping. This form of adaptability to new or differing events is well documented (Skinner, 1977) and thereby should be expected when conducting long-term, involved assessments of challenging behaviour. However, there are still instances where assessments occur in isolation or a significant amount of time elapses between assessment and the initiation of intervention, reducing the capacity of those interventions to match the functions identified in the initial assessment (Gresham, Skinner & Watson,

2001). This propensity for behaviour to continue to adapt can invalidate assessment data which relate only to a pre-intervention understanding of behaviour.

5.2.5 The Need for Quality Practitioners Capable of Interpreting Behavioural Data

The increase in demand for FBA to be undertaken in applied settings that deliver services to groups of individuals with complex needs has created a concurrent need for appropriately trained individuals capable of conducting this assessment process. Sugai, Lewis-Palmer and Hagen-Burke (2000) suggest that FBA is best conducted by individuals who have competence and expertise to be able to process information from assessment through to intervention. In addition, these individuals are required to have sufficient knowledge of the range of behavioural principles and strategies available for them to modify behaviour. March and Horner (2002) emphasise the high level of skill required to competently conduct and use FBA. In part this is due to the complexity of the assessment methodologies (discussed in Section 5.2.1 above) and the complexity of the behaviour itself (discussed in Section 5.2.2 above). However, the high level of skill required has more to do with the individualised nature of this type of assessment. Individualised treatments differ greatly from their manualised counterparts because the practitioners themselves need to adapt to suit the presentation of the client and their behaviour. This requires an understanding of behavioural theory and of the aims and objectives of behaviourally-oriented assessment methodologies. Carr (1993) suggests that behaviourism is much more than the mechanistic process that others may perceive it to be. The emphasis on understanding the operant factors involved in maintaining behaviour is a

dynamic and reciprocal process which requires input and detailed analysis from the professional (Morris, 1993).

The issue of having untrained or inexperienced observers conducting functional assessments is greater than simply missing or failing to recognise crucial behavioural information. Because the pool of ‘untrained behaviour analysts’ can include teachers, parents or other individuals with previous knowledge of the student being observed this can lead to partiality in either the recording or analysis of behavioural data (Quinn et al., 1998). While the FBA literature emphasises impartiality and objectivity these attributes may not be well-developed in educators and the wider school environment. Educational personnel are privy to information about students that is not obtained through assessment and often have pre-existing or continuing relationships with students outside of the FBA process. While it is advantageous to include individuals who have direct experience with the student it is not recommended that those individuals lead the development of intervention plans (Sugai et al., 2000). Instances of bias can also extend to the attitudes of the educators. Negative attitudes towards the FBA process or an unwillingness to participate can have detrimental effects on the execution of FBA in schools (Kates-McElrath & Axelrod, 2008). The occurrence of bias may partly explain occurrences of undifferentiated results or why an intervention appears to produce only partial reductions in problem behaviour (Day, 1994; Haring & Kennedy, 1990)

5.3 Improving the Translation of FBA into Schools

These five barriers possibly support the view that insufficient knowledge regarding the aims, objectives and procedures of FBA and poor execution of this process are both

phenomena that might exist for educators. The potential adverse impact of these barriers in the effective implementation of FBA in Australian schools is unclear and requires investigation. One possible explanation for these barriers is that school teachers are almost exclusively trained in delivering curriculum and assessing student responses to that curriculum (Allday, Nelson & Russel, 2011). Educator training in behaviour management has, by necessity, focused on general frameworks capable of being relevant to a wider range of students and presenting problems. However, that training has been shown to create a trend towards use of generic labels for behaviour (i.e., “disruptive”) and its consequences (i.e., “disruption caused to the teacher, other students and learning environment”) (Lerman et al., 2009). This broad approach to remediation of challenging behaviour not only encourages use of reactive strategies but it also reduces the opportunity for reflection on the functional and individualised aspects of that behaviour. Gresham (2004) has proposed that the development and implementation of appropriate behavioural assessment and intervention requires knowledge, skill, sensitivity and tact. While schools often employ professionals with expertise and/or professional experience with individuals with ASD, to assist with the creation and development of treatment plans, it is typically the classroom or special education teacher who is responsible for the daily administration of those plans. Stoiber & Gettinger (2011) suggest that any existing knowledge gaps in teacher repertoires for dealing with problem behaviours can lead to misapplication of intervention techniques or narrow intervention selection based on effectiveness with previous students. These approaches do not fit well with the criterion for individualisation arising from behavioural data collected during in-depth assessment. The focus on narrow classroom management strategies is consistent with the literature noting a discrepancy between the knowledge and use of evidence-based interventions in school settings (Kratowill & Stoiber, 2002; Schaughency & Ervin, 2006; Stoiber & Kratowill, 2000).

Stoiber and Vanderwood (2008) have contended that education personnel are aware of these knowledge gaps. Their investigation of school 86 school psychologists indicated that the two most desired areas of professional development identified in schools were classroom-based interventions followed by FBA. Frey, Park, Browne-Ferrigno, and Korfhage (2010) made similar arguments following administration of focus groups with 101 early-childhood teachers. They found that, although the implementation of FBA was supported by key stakeholders and administrators, the teachers themselves were unclear on the procedures required to implement such assessment procedures, citing the frequency, intensity and accessibility of professional development as the major barrier. A lack of adequate professional development in FBA is consistent with studies such as Stoiber and Gettinger (2011) whose experimental analysis of 75 teachers' application of FBA found that teachers often report feeling ill-equipped to meet the demands of students with complex needs and disruptive behaviour. They also identified that poor professional development was more likely to lead to teachers expressing frustration in their attempts to develop safe and supportive classroom environments. Yet despite awareness that knowledge gaps exist, there appears to be a reticence for educators to refer to peer-reviewed literature which contains current trends and recommendations for the application of FBA and behavioural intervention. Stormont, Lewis and Smith (2005) made similar arguments following the administration of a questionnaire to 96 early-years teachers and support staff. They found that although the educators supported the use of strategies associated with FBA they questioned the feasibility of implementing these strategies in an educational setting. McGee and Morrier (2005) maintain that the dissemination of written knowledge through research studies is an area which may be perceived as irrelevant to those who are working as practitioners in the field. The mismatch between

laboratory-driven functional assessment and analysis and the conditions of the classroom has possibly resulted in educational personnel not being able to apply findings from the research or view these findings as irrelevant to their ‘behaviour manager’ roles. This discrepancy is suggested to arise from the following four reasons:

1. Whether the conditions are laboratory-based (i.e. simulated or de-contextualised) vs. natural (i.e. occurring within the school context) (Gable, Hendrickson, & Van Acker, 2001; Matson & Minishawi, 2006),
2. Limited focus on what teachers have to deal with (e.g., complex behaviour in socially complex environments) (Blood & Neal, 2007),
3. The use of behavioural principles and concepts in which teachers would not be grounded (O’Neill & Stephenson, 2011),
4. Variation in terminology depending on the research team/study (e.g., reference to form, structure or topography when describing behaviour) (Hanley, 2012; Crone & Horner, 2000).

The research which has identified the barriers to effective FBA application in schools (discussed in Sections 5.2.1 to 5.2.5 above) provides a basis for suggesting that there is a need for development of teacher-focused FBA frameworks that both adhere to best-practice requirements and the particular conditions inherent in schools. This might be addressed by developing school-oriented training programmes for use of FBA which meet the particular needs of educational personnel. McGee and Morrier (2005) assert that it is crucial for professional personnel who work with students with ASD to receive specialised training that prepares them to address the complex needs of this spectrum condition.

Stoiber and Vanderwood (2008) suggest that “*training school personnel to implement the proactive, positive behaviour support intervention strategies, which should accompany a functional assessment, requires strategic and formative professional development processes*” (p 288). However, the development of FBA-based competencies is difficult as FBA is not a singular process, but a number of processes which need to be contextualised in line with educator needs, classroom/school features, and student features. Before this contextualisation can occur it is important not only to investigate the baseline knowledge and attitudes to FBA, of education personnel who would be responsible for implementing FBA in their schools, but also to explore the issues they face preventing effective translation of FBA theory into school-based practice. Establishing this baseline would allow for identification of the specific gaps in educators’ knowledge and attitudes that might prevent effective applications of FBA to students with ASD. Three issues are particularly pertinent to the examination of baseline FBA knowledge/attitudes of educators: the frequency with which they apply FBA to the behaviour of their ASD students, the range of data-collection procedures they employ to assess and analyse student behaviour, and adherence of the school-based behavioural assessments to best-practice principles for FBA arising from the applied research.

This research aimed to evaluate the frequency and integrity (i.e., adherence to best-practice guidelines) with which mainstream school educators employed FBA procedures to assess, understand, and remediate the challenging behaviour of their students with ASD. A further aim of this research was to identify and describe any gaps, in FBA knowledge and practical application, educators might experience with specific reference to the complex behaviour challenges displayed by students with ASD.

The following five questions framed the structure and content of this research:

1. What do educators know about FBA aims, procedures and outcomes as these apply to investigating the challenging behaviour of students with ASD?
2. Are there differences in FBA knowledge relative to the roles educators fulfil in schools (i.e., classroom teachers, special education teachers, guidance officers and policymakers)?
3. Do educators undertake a formal assessment, involving data-collection on behaviour plus its precursor and maintaining factors, prior to selecting and implementing behavioural interventions for their students with ASD?
4. Do educators institute a data-collection process, during implementation of behavioural interventions, to monitor the effects of those interventions on the behaviour of their students with ASD?
5. What attitudes do educators hold in relation to the relevance of FBA as a process for assessing and remediating the challenging behaviour they regularly encounter when supporting their students with ASD in the classroom and wider school environments.

These five questions were first explored via face-to-face interview and subsequently survey with educators positioned in State Primary and State Secondary schools on the Gold Coast. Chapters 6—9 report on the findings obtained from the face-to-face interview and Chapters 10—12 provide an analysis of key results derived from the survey data.

Chapter 6

Review of Data Analysis Frameworks and Procedures for Study 1

The research reported in this thesis comprised two separate studies and employed a multiphase mixed methods design to explore educators' knowledge about, applications of, and attitudes towards FBA procedures with specific reference to the challenging behaviour their students with ASD displayed in the classroom and school contexts. Study 1 involved administration of a face-to-face interview (i.e., the School-Based FBA Interview) which invited educators to describe their understanding of FBA concepts and terminology as well as their experiences in applying FBA to students with ASD. Study 2 involved development of a survey (i.e., the School-Based FBA Survey) which was made available to educators online. The structure and content of the online survey were created from results obtained in Study 1 to ensure the survey accurately reflected the actual student problems, teaching situations, and contextual factors educators were most likely to confront in their day-to-day work. This chapter reports on the research paradigms and data-collection and interpretation procedures which shaped development of Study 1. The major findings obtained from the analysis of interview are discussed in Chapter 7.

6.1 Description of Research Methods

Within the social sciences three broad categories of research methods are commonly used, each indicative of a particular research paradigm (Taylor, Kermode & Roberts, 2007). These are: qualitative methods, quantitative methods and mixed methods (Weaver & Olson, 2006). Research methods that adopt a qualitative stance aim to obtain descriptive or narrative accounts of people or practice. These methods have commonly been employed in areas such as sociology and other social sciences where the emphasis is

on obtaining an in-depth understanding of human behaviour and experiences. Fischer (2006) characterises qualitative methodology as a reflective, descriptive and usually reflexive process which is used to ‘*describe and understand*’ actual occurrences of human behaviour and experiences from the participants’ own perspectives. This fits within what would be considered a constructivist paradigm or one that theorises that “*social phenomena and their meanings are constructed by the people involved in using them, rather than being external objects existing independently of them*” (PREST, 2004 p. 7).

Quantitative research methods develop and employ mathematical models, theories and hypotheses pertaining to natural phenomena which lend themselves to statistical measurement (Gravetter & Walnau, 2013). Flick (2006) explains that psychological research has almost exclusively used quantitative designs to demonstrate and test social phenomena. This fits within what would be defined as a positivist philosophy which contends that valid knowledge is based upon empirical validation (Howitt, 2010). Such focus has restricted social research to the use of quantitative research methodologies in obtaining research data (Frost, 2011). These quantitative data-collection methodologies share commonalities in that they aim to collect large quantities of data on social phenomena which can subsequently be used to classify correlational relations between carefully measured variables. The obvious advantage in conducting research in this manner is that it guarantees a higher level of objectivity as it excludes the researchers’ influence on the data sets. However, this trend towards standardisation in social science research has led many (e.g., Bonß & Hartmann, 1985; Krenz & Sax, 1986) to express disenchantment with quantitative methodologies and to question how representative their results are to everyday life. It has been argued that by using numerical measurements of specific aspects of phenomena to test hypotheses, social researchers may miss crucial

information or misinterpret data points as they are often collected out of context (Thomas, 2003). These increasing criticisms of quantitative research design have led to an insurgence of qualitative and mixed-methods designs in psychological research in recent history (Ye & Inman, 2007).

Mixed research designs reflect the combined use of both quantitative and qualitative methods with Tashakkori and Teddlie (2003) explaining that integrating both types of research methods can capitalise on the strengths of each approach and also counteract its weaknesses. There are two distinct approaches for combining quantitative and qualitative methods; the first is to collect data employing both methods concurrently while the second is to collect data sequentially. These variations in data-collection approach may use the same methods but the ways in which they are sequenced and combined can significantly impact the process of conducting data-collection and analysis. The decision on whether to adopt concurrent versus sequential approaches rests on the rationale and aims of the research being conducted. Greene, Caracelli, and Graham (1989) conceptualised mixed-methods research designs as belonging to one of five distinct categories based on how the use of analysis methods are used; Triangulation, Complimentary, Initiation, Expansion and Development. These different purposes are differentiated by: the intentions of the researcher, the order in which methods were incorporated and the ways in which one analysis of data impacted on the subsequent or concurrent data analysis.

The current research aimed to incorporate mixed-methods for two of the purposes outlined by Greene et al., (1989): Triangulation (the validation of one set of research data through cross reference with another data set) was adopted in Studies 1 and 2 through the incorporation of clinical vignettes with the usual question-asking items which form the

basis of interview and survey methods (purpose 1). The inclusion of vignettes formed the basis for corroborating the interview (Study 1) and survey (Study 2) responses obtained from educators. Development (the use of one set of research data to inform the development of data collection methods to obtain another set of data) was also incorporated as the results of the first study were used in the development of an FBA survey for Study 2 by incorporating language and processes that corresponded with the language and terminology that educators used (purpose 2). Given the variation and complexity that was expected in different educators' practises a multiphase design was developed which incorporated sequential data-collection, intended to capture the diversity of systems and procedures which existed in participants' schools, and the diversity of educators' experiences within these varied systems.

6.2 Study 1 Research Design

Study 1 investigated educators' (i.e. classroom teachers, special education teacher, administrative policy-makers and guidance officers) current knowledge and practices in relation to the following three aims:

1. How the challenging behaviours of students with an ASD were assessed and treated within the school context with specific reference to FBA applications.
2. Whether differences occurred in the knowledge and application of behavioural assessment between different educational roles (i.e. teachers, administrators and guidance officers).
3. Whether a gap existed between best-practice guidelines for FBA outlined through research and what was actually occurring in the classroom.

A semi-structured interview was designed for collection of qualitative information in relation to the three specified aims and administered to educators working in schools operating within the South-East region of Education Queensland. Interviews are considered a viable technique for the collection of research data as they allow for the identification of processes that cannot be directly observed or otherwise obtained through quantitative methods. They also offer the advantage, in social research, of being considered more likely to elicit participant viewpoints than other types of data-collection methods (i.e., standardised questionnaires) (Kvale, 2007). As such interviews are often used in psychological and behavioural research due to their ability to elicit data on covert events which might not be otherwise apparent and provide the opportunity to contextualise responses for a more in-depth investigation (Shaughnessy, Zechmeister & Zechmeister, 2003; Cresswell, 2007). In Study 1, the semi-structured interview aimed to create a standardised process for data-collection but also permit flexibility to explore themes and expand on lines of questioning. This allowed for set topics to be investigated in a systematic manner and permitted detection of the nuances of individual educator experiences. The interview also provided opportunities for pursuing in-depth information in areas of interest through the use of questioning (probing) which is not available in many other forms of data-collection (Flick, 2009). The semi-structured interview for this study was constructed to obtain detailed accounts of educator experiences and create a sampling frame to assess the application of FBA within the educators' schools. Data, in the form of interview responses, were subsequently used to establish thematic trends, based on the sampling framework developed from the qualitative analysis. These trends subsequently

formed the basis for the development of the FBA-survey which was administered in Study 2 (See: Chapter 10 for a detailed account of the School-Based FBA Survey).

The methods used to identify and interpret the response patterns arising from the educator interviews was thematic analysis, which is a framework commonly used in the fields of psychology and sociology particularly in the interpretation of vignettes (e.g., Murray, 2003), narratives (e.g., Fleischmann & Fleischmann, 2005), open-ended questionnaires (e.g., Papageorgiou & Kalyva, 2010) and interviews (e.g., Phoenix & Sparkes, 2008). Researchers (e.g., Jang et al, 2008) have asserted that thematic analysis lends itself to mixed methods research design; this can be evidenced in their study on school success under challenging circumstances where data were collected through survey and then interviews and focus groups, with subsequent integration of their results performed through parallel analysis. Further, thematic analysis has also been established in mixed methods design as a process which can be used to clarify and build on the results of one method with another method (Harwell, 2011). Identifying the broad features of information obtained via interview through a thematic analysis can greatly assist in verifying the questions to be asked in subsequent quantitative methods and can also identify topics or areas which may have otherwise been overlooked (Todd, Nerlich & McKeown, 2005). The data obtained from the FBA interview in Study 1 was submitted to a thematic analysis process, a wider discussion of thematic analysis objectives, procedures and outcomes is presented in Section 6.3 (pages 77- 89) below.

6.3 Objectives, Procedures and Outcomes of Thematic Analysis

Thematic analysis is a method of descriptive inquiry which extracts specific patterns of meaning found in sets of qualitative data such as those obtained from interview and focus group (Joffe, 2012). The underlying assumption with such analysis is that assessing differing social groups or roles will yield differing views, opinions and experiences (Flick, 2006). Bunn (2011) proposes that the description of themes is often central to discursive work and is essential in deriving meaning from what is being communicated through the data. Themes are established by recognising specific patterns of commonalities, relationships and differences across the data set which are considered salient to the research interests (Gibson & Brown, 2009). Central to the application of thematic analysis is the development of thematic categories that describe inherent meaning contained within data sets. In simple terms, a theme aims to capture something important about the data in relation to the research interest and then organise those data into patterns of responses or meaning within the data set (Braun & Clarke, 2006). Themes can refer to the manifest content of the data, (i.e., something directly observable in the text), or may refer to a more latent level of information (Joffe & Yardley, 2004). Thematic analysis was designed to delve beyond observable material such as content analysis and to “*identify more implicit, tacit themes and thematic structures*” (Joffe, 2012, p 271). Thematic analyses can focus on the manifest themes, however, the aim is to understand the latent meaning of the manifest themes observable within the data. This process requires interpretation of the data sets into thematic categories which describe the patterns that have been identified within the data. The formation of these thematic categories occurs through the systematic coding of material contained within the data set.

It is the capacity of thematic analysis to be used as a simple and flexible data-interpretation method that makes it both accessible and attractive to social and applied researchers (Joffe, 2012). As a form of qualitative data analysis it can be less demanding than other methodologies as it does not require the researcher to link the data to a particular theory as with methods such as grounded theory. Frost (2011) suggests that the focus of thematic analysis is solely on exploring the content of the data with no attempt to interpret the participants' intent in supplying the information. This means that any conclusions drawn from a thematic analysis are supported by the raw data and thereby considered more valid than data derived from other qualitative methodologies such as grounded theory (Joffe & Yardley, 2004).

Thematic analyses also provide a systematic process from which quantitative methods can be employed. This method of analysis allows the researcher to interpret meaning which brings the risk of subjective or inconsistent conclusions. For this reason thematic analysis can be readily adapted into mixed methodology research design or into larger scale qualitative studies with a number of participants as the analytic process is not as intensive nor as time-consuming, yet still produces strong data-based results which can supplement other research data or provide a platform for further investigation (Boyatzis, 1998).

While thematic analysis represents a suitable framework for use in the qualitative analysis of data it is not without its shortcomings. Two major criticisms have arisen in regard to the use of thematic analysis as an analytical tool. The first and most significant criticism of thematic analysis is that, despite it being viewed as a relatively simple mode of analysis, it can be very time consuming, particularly if it is being conducted by only one researcher (Joffe, 2012). This occurs due to the reliance on inductive coding and the

detail required from the text to support the coding process. However, this does make thematic analysis well-suited to team research where a number of researchers can collaborate to process the raw data in a shorter amount of time. This also has the added benefit of increasing the reliability of the coding frame implemented (Guest, MacQueen, & Namey, 2012).

The second criticism of thematic analysis is that it lacks specificity and nuance in its interpretation of the data (Braun & Clarke, 2006). In part this argument stems from the intuitive nature of thematic analyses (Guest, MacQueen, & Namey, 2012). Despite thematic analysis existing as a distinct research methodology since the 1940s it often lacks the status of similar research methodologies (Braun & Clarke, 2006). Howitt (2010) suggests that this ambivalent attitude towards thematic analysis stems from the lack of literature outlining thematic analyses, and in particular the lack of research articles describing the specific procedures. This is a view shared by many (e.g., Guest, MacQueen, & Namey, 2012; Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006) and has led to the publication of a number of guides listing specific goals, outcomes and application steps for conducting thematic analyses.

6.3.1 Objectives of Thematic Analysis

Howitt (2010) maintains that, compared to other forms of qualitative analysis, thematic analysis is a relatively ‘common-sense’ approach that is easily accessible and comprehensible. The rationale provided for these assertions stems from the relatively intuitive nature of thematic analysis in terms of the interpretation of data and the coding systems that are employed. A major distinction in terms of what constitutes a theme lies in whether it is drawn from existing theoretical ideas that the researcher brings to the data

(deductive coding) or from the raw data itself (inductive coding). Flick (2006) suggests a major obstacle for conducting a thematic analysis lies in the coding process and highlights what he considers a significant gap between the theoretical explanation of thematic coding and the practical application. The coding process can be defined as the production of labels which describe the contents of a fragment of the data (Fischer, 2006). The researcher's code should indicate something that is important or interesting about the piece of data they have labelled. The coding process then entails the researcher systematically working through the entirety of the data in order to code as much of the data as possible (Howitt, 2010).

Frost (2011) describes the initial coding systems used in thematic analysis as 'open', meaning that segments of information were simply labelled by defining and developing categories based on their properties and dimensions to identify an underlying concept (i.e., Open Coding). In the process of Open Coding, the concepts emerge from the raw data and are later grouped into conceptual categories. The goal is to build a preliminary framework for later analysis and further coding (Flick, 2006). As the codes are built directly from the raw data, the process of open coding itself ensures the validity of the work as the researcher is highlighting content based on its meaning. However, Braun and Clarke (2006) suggest that in initial stages codes are likely to lack sophistication, as each individual piece of information is viewed as separate and not as part of a larger whole. This process is also dependent on whether data points are coded via a data-led or a theory-led approach (Howitt 2010). The difference in these approaches is largely determined by the nature of the research and the ability of the researcher to focus the process on the data rather than incorporating theoretical perspectives. By using theoretically-derived codes it is possible to replicate, extend or refute prior discoveries;

however, the very nature of the coding process makes it difficult for researchers put aside theoretical bias while doing so. This process is also linked very closely to grounded theory and would not be strictly considered an application of thematic analysis.

Inductive coding is then the predominant technique employed in categorising the data for a thematic analysis (Schadewitz, & Jachna, 2009). This coding system requires that the codes identified be drawn specifically from examples in the text. Braun and Clarke (2006) suggest that inductive coding can be conceptualised as ‘bottom up’ coding, as developed codes are strongly linked to the data themselves rather than trying to fit the data into a pre-existing coding frame. In fact the creation of a coding frame from the initial open codes is a distinguishing feature of thematic analysis. This means that the themes being identified emerge from a structured process. Braun and Clarke (2006) mention that it is unrealistic to assume that data are coded in an ‘epistemological vacuum’, however, they suggest that inductive coding provides more reliable analysis of data that subsequently leads to more valid assertions from the research.

6.3.2 Conducting a Thematic Analysis

It has been suggested that thematic analysis is best suited to expounding the particular disposition of a sample group toward the phenomenon under study (Joffe, 2012). This means that thematic analysis can be used to identify people’s conceptualisations and experiences about the research interest. This approach has been used substantially in health research to identify phenomena such as; people’s attitudes towards particular illnesses or diseases (e.g., Washer et al., 2008; Joffe, 1999),

relationships between patients and staff (e.g., Fischer, 2006) and the effect of informational support on those with cancer (e.g., Gooden & Winefield, 2012). Thematic Analysis is also increasingly finding a foothold in mental-health research for similar reasons. Studies such as that of Papageorgiou and Kalyva (2010) have used thematic analysis to identify themes in questionnaire data gained from parents of children with autism when asked about their needs and expectations of the effects of their child's diagnosis. Other studies have focused on the subjective experiences of different therapies, for example Allen et al (2009) explored participants' experience of Mindfulness-Based Cognitive Therapy in assisting with their depression. Thematic analyses have also been used to identify themes in individuals' attitudinal processes such as was reported by Phoenix and Sparkes (2008) who used thematic analysis to identify themes in interviews with young athletes discussing their perceptions of self-aging. Thematic analysis has been used in social research for many decades; however, only recently have proponents sought to provide concrete guidelines for its application in research (Guest, MacQueen, & Namey, 2012). The publications by Boyatzis (1998) and Braun and Clarke (2006) have been significant in establishing thematic analysis as a formal data interpretation method and providing clear frameworks for using it to analyse data sets (McLeod, 2011). Boyatzis (1998) acknowledged that despite the wide-spread use of thematic analysis both within and beyond psychology it was poorly defined and was seldom recognised as distinct from other qualitative frameworks. It was Boyatzis' work that delineated thematic analysis from grounded theory and other similar methodologies and provided a rationale for the existence of a separate analytic framework. However, Boyatzis' book is often considered too technical and complex for practical use particularly for researchers without extensive knowledge in qualitative techniques (Howitt, 2010). Despite this, Boyatzis' work did pave the way for Braun and Clarke (2006) who introduced a concrete and

accessible framework for applying thematic analysis in psychological research. Braun and Clarke (2006) in particular addressed many concerns regarding the validity of thematic analysis by providing a distinct framework that differentiated itself from anecdotal approaches via the rigor of coding without limiting the flexibility and simplicity of its application. They asserted that clear and concise guidelines were required to counteract much of the criticism that was levelled at qualitative research concerning the notion that ‘anything goes’ in the analysis of results. In the case of thematic analysis, adherence to guidelines ensured that themes were representative of participant responses and not generated from a few vivid examples.

Braun and Clarke’s (2006) model included six distinct steps to be used as a guide for conducting a thematic analysis but they emphasised that their proposed process could involve moving backwards and forwards between different steps and between the entire data sets. They argued that this fluidity created a more organic analysis of the data which did not restrict the researcher from applying newer codes to data that were already coded. The model for conducting thematic analysis proposed by Braun and Clarke’s (2006) is summarised in Table 6.1.

Table 6.1 – Braun & Clarke's (2006) framework for the application of thematic analysis

	Application Step	Description
Step 1	Becoming familiar with the data	Immersion in the data. Usually through transcription or repeated reading of the data sets.
Step 2	Generating initial codes	Identification of features within the data that provide interest in regards to the research questions being asked.
Step 3	Searching for themes	Refocusing the analysis of data on broader themes rather than codes. Involves the sorting and organisation of coded data points.
Step 4	Reviewing themes	Mapping, review and subsequent refinement of themes based on a review of the data supporting each theme. Ensuring there is distinction between themes.
Step 5	Defining and naming themes	Identifying the essence of each theme and distilling the theme in terms of the aspect(s) it captures.
Step 6	Producing the report	Structuring the themes in a coherent and structured manner to provide a logical and coherent account of the thematic content of the data sets.

The stepwise process described in Table 6.1 above is considered as setting the guidelines for a general frame for the thematic analysis that could be adapted to fit individual research designs (Braun and Clarke, 2006). The adaptability of this framework

has allowed for its implementation into a variety of research designs and has led to its widespread adoption as the preferred thematic analysis methodology (Howitt, 2010).

6.3.3 Maintaining Objectivity in Thematic Analyses

Qualitative researchers recognise that the type of data gathered and the analytic processes employed are often influenced by subjectivity (Morrow, 2005). When using methodologies such as thematic analysis it is crucial then to maintain the quality and trustworthiness of the research and avoid unnecessary researcher bias. Braun and Clarke (2006) stressed that despite the assumption that thematic analysis naturally leans towards subjectivity it is possible to uphold rigor and fidelity throughout the analysis of data. One technique for maintaining objectivity that is often employed by researchers is the practice of bracketing (Morrow, 2005). Bracketing can be defined as a process whereby the inherent assumptions and preconceptions of the researcher are identified by them and made overt (Johnson & Christensen, 2012). This process is often employed to maintain objectivity in many phenomenological studies, as the researcher acknowledges their inherent biases and sets them aside so as not to unduly affect the research. However, irrespective of the ability of the researchers to remain objective, Morrow (2005) suggests that it is the adequacy of the data-collection methods and interpretation of these data that is most essential to upholding the trustworthiness and quality of a thematic analysis.

These processes are particularly important in the application of thematic analyses as Joffe (2012) contends that, unlike other qualitative methods, studies using thematic

analysis have a tendency to overlook any preconceptions that the researcher may bring to the data. It is proposed that this potential lack of objectivity can be overcome through an increased emphasis on being systematic and transparent while conducting the analysis. Joffe and Yardley (2005) have illustrated the necessity of creating conceptual tools to be used in the classification and analysis of the data collected through interview. They attribute the criticism directed towards many thematic analyses in published studies to the lack of clear outlines detailing the specific analysis techniques that were used. While the guidelines provided by Braun and Clarke (2006) have contributed to the recognition of thematic analysis as a rigorous methodology Howitt (2010) contends that each researcher is responsible for ensuring integrity in their methodology. Joffe (2012) suggests that a sound thematic analysis should describe the bulk of the data and not simply segments of the data sets that support the arguments the researcher wants to make. This process begins with the accurate and thorough transcription of data to eliminate any potential bias from the offset. However, this also extends to the construction of coding frames ensuring that the codes used are not simply select examples of the data which support the arguments of the researcher. The use of inter-rater reliability measures during the creation of codes also contributes to the accuracy of coding by identifying potential instances of subjectivity in the application of the coding frame (Joffe, 2012). While these measures are accepted as enhancing the quality of thematic analyses they do not always occur (McLeod, 2010). Fereday and Muir-Cochrane (2006) make a case for the inclusion of reliability testing of the codes as an essential step which is absent from Braun and Clarke's framework. The guide proposed by Fereday and Muir-Cochrane (2006) also contains six distinct steps which place a greater focus on establishing reliable coding frames and on the corroboration of themes in order to provide more reliable conclusions from the research data. Their framework is outlined below in table 6.2.

Table 6.2 – Fereday & Muir-Cochrane's (2006) Framework for the application of thematic analysis

	Application Step	Description
Step 1	Developing the coding manual	The development of a template which can assist as a data management tool in organising initial codes.
Step 2	Testing the reliability of codes	Using inter-coder reliability measures to ensure accuracy of the code manual during initial coding and subsequent revision of the manual
Step 3	Summarising the data and identifying initial themes	Paraphrasing and summarising the raw data in response to the research questions.
Step 4	Applying template of codes and additional coding	Systematically reviewing each data set and rigorously applying the coding manual to ensure fidelity with the definitions contained within the manual.
Step 5	Connecting the codes and identifying themes	Discovering patterns that occur within the data sets identified through the coded material.
Step 6	Corroborating and legitimating coded themes	Confirming findings by scrutinising clustered themes and comparing them to the assigned codes to ensure legitimacy

This guide was largely developed from Boyatzis' work and so shares many similarities with Braun and Clarke's framework. The major distinguishing feature of the Fereday and Muir-Cochrane (2006) guide is the recommendation for rigour to be maintained in developing and applying a consistent coding frame. A robust coding frame allows for effective comparison of coded data and implementation of reliability measures

following the development of initial codes. Fereday and Muir-Cochrane (2006) do not provide any clear guidelines as to how reliability measures should be obtained. However, Joffe (2012) suggests that given the intensity of the workload involved in coding for a thematic analysis a ‘substantial portion’ of the data comprising approximately 10-30% of the total data pool should be submitted to reliability testing.

6.3.4 Proposing a Combined Thematic Analysis Framework

Both Braun and Clarke (2006), and Fereday and Muir-Cochrane (2006) have provided viable methodological frameworks for the successful implementation of thematic analyses. Braun and Clarke’s (2006) thematic analysis framework entails a more holistic approach to the analysis process; however, Fereday and Muir-Cochrane (2006) offer a more systematic approach to the process of inductive coding. Therefore, by combining the two frameworks it is possible to create a method for conducting thematic analysis that incorporates the more widely accepted model proposed by Braun and Clarke with the additional rigour that Fereday and Muir-Cochrane’s provide. As shown in figure 6.1 many steps between the two frameworks overlap, allowing for the creation, application and subsequent reliability testing within the more traditional thematic analysis model.

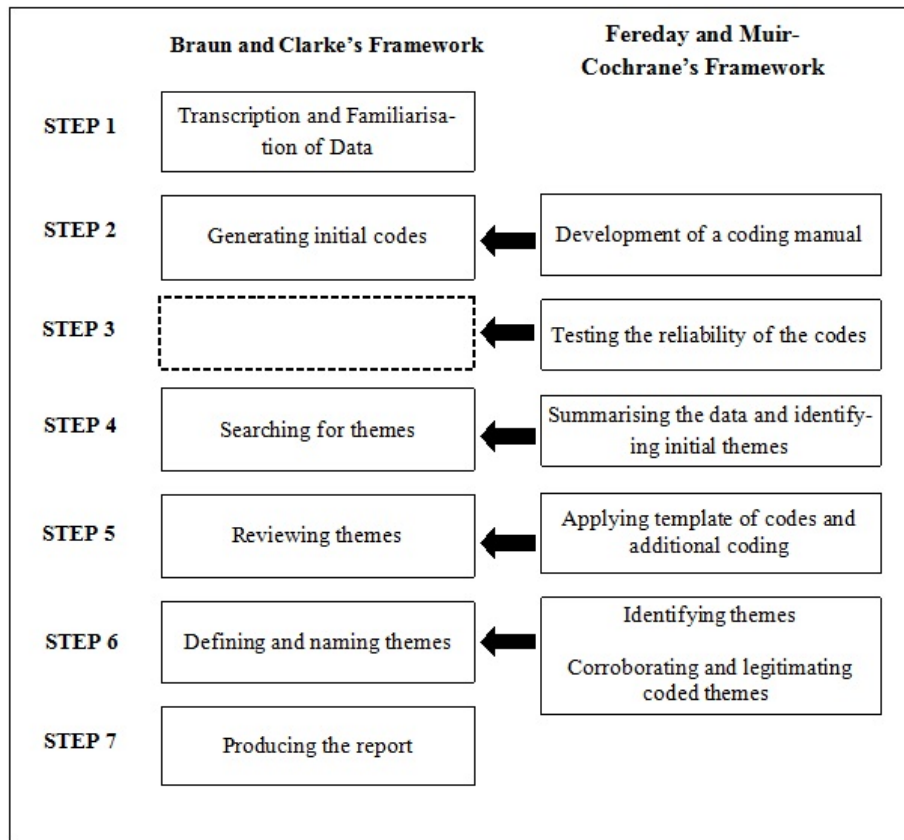


Figure 6.1 – Combining Bruan & Clarke's (2006) and Fereday & Muir-Cochrane's (2006) thematic analysis frameworks

The proposed seven-step process, shown in Figure 6.1 above was applied to the challenge of analysing the interview data obtained during Study 1 (see Chapter 7 for further details on the application of this process to the interview data). Within this process, Step 2 focused on developing a coding manual based on the initial codes generated and Step 3 involved the implementation of reliability measures before the initial development of themes. By upholding reliability during the early stages of the analytic process the likelihood of confirmation bias or fabrication of data is considerably mitigated (Crabtree & Miller, 1999). Furthermore, the development and consequent application of a coding manual during the review of themes (Step 5) and the ability to refer back to the manual while defining and naming themes (Step 6) allow for greater legitimacy of findings due to the more systematic review process being undertaken.

Chapter 7 reports on the structure and content of the semi-structured interview administered to educators and provides an in-depth description of the procedures used to apply the thematic analysis process outlined in Section 6.3.4 (pages 88-89) above to the interview data.

Chapter 7:

Methods for Study 1: Administration and Thematic Analysis of the School-Based

FBA Interview

The purpose of this study was to explore educators' baseline knowledge and attitudes to FBA to gain an in-depth understanding of how they managed the challenging behaviour of their students with ASD. This exploration involved face-to-face administration of the semi-structured School-Based FBA Interview and application of the seven-step thematic analysis process described in Section 6.3.4 (page 89) of this thesis.

7.1 Participants

Participants for this study were 40 education personnel employed by Education Queensland with 72.5% (29) of the participants being female and the remaining 27.5% (11) male. Two inclusion criteria were used to ensure that participants were selected based on their involvement in the education of students with ASD (i.e., delivery of curriculum, student assessment, or implementation of educational/behavioural interventions) or the management of students with ASD (i.e., providing strategies or support for other educators, liaising with students' parents, or sitting on special needs committees on behalf of students). The first inclusion criterion required participants to be employed in a full-time position with Education Queensland. The second inclusion criterion required participants to have had recent (i.e., within the last year) contact with students with ASD via their role as educators in a State School. This contact could be either direct (i.e., administration of curriculum, administration of assessments, development of interventions, or implementing interventions) or indirect (i.e., development of policy,

allocation/application of resources for students or providing support for other educational staff in the selection or administration of educational adjustments). No restrictions were placed on participant selection based on qualification or prior level of experience in supporting/teaching students with ASD.

Participants were divided into four sub-groups based on their roles within the school and responsibilities in relation to students with ASD. Each sub-group was represented equally with $n=10$ participants (i.e., Mainstream Teachers, Special Education Teachers, Guidance Officers and Policy Makers). This division of participants permitted comparisons between groups to identify whether the differing responsibilities of educators impacted upon their understanding and implementation of FBA and the subsequent development of needs-based intervention plans arising from this form of assessment. The sub-groups were heterogeneous in terms of age, gender and experience, as evidenced in table 7.1 below.

Table 7.1 – Demographic characteristics of participant sub-groups

School Role	Mainstream	Special	Guidance	Policy Makers
	Teachers ($n=10$)	Education Teachers ($n=10$)	Officers ($n=10$)	($n=10$)
Mean Number of Years in Job	11.6	10.0	13.8	20.2
Gender Ratio (M/F)	1:9	1:9	6:4	3:7

7.2 Participant Recruitment

Participants were recruited from ten mainstream, State Schools located in the South-East region of Queensland. Of the ten schools included in the study, six were State Primary Schools while the remaining four were State High Schools. It was considered important to have educators represent both educational settings as it has been well-documented (e.g., O'Neill & Stephenson, 2013; Gresham, 2004) that students with ASD are likely to have different experiences and, therefore, provide different challenges across primary and secondary school.

Purposive sampling was implemented via the school principals in order to ensure that the inclusion criterion for participation in this research were adhered to. This was important as the sample selected was required to have expert knowledge on addressing the challenging behaviour of ASD students and understanding of specific practices within their own school (i.e., Allocation of resources and the creation of behavioural intervention plans and supports)

The inclusion of non-representative samples was conducted according to Marshall (1996) who considered this style of purposive sampling appropriate when recruiting smaller sample sizes or in samples when the possession of specific knowledge is relevant to answer the research question. This recommendation regarding non-representative samples is in line with researchers (e.g., Sudman & Kaldon, 1986; Tansey, 2009; Schrueder, Gregorie & Weyer, 1999) who suggest that while non-probability sampling can limit the potential to generalise data findings from the sample to a broader population, generalisation to a larger group does not always adhere to the goals of a study. In particular probability samples become less suitable in smaller groups for which it is

unlikely to be entirely representative or where the larger population is unknown (Schrueder, Gregorie, & Weyer, 1999).

Participants were recruited via purposive sampling through the multi-stepped process outlined below:

1. A list of schools from within the South-East region of Education Queensland was obtained from the Regional Director of the Department of Education and Training (DET). Principals from these schools were contacted directly via phone and provided with details of study. Any queries from principals were answered during this initial contact.
2. If the principal was willing for their school to participate then gatekeeper approval was obtained via formal signed letter.
3. The principal nominated one educator suitable for inclusion in each sub-group (i.e., Mainstream Teacher, Special Education Teacher, Guidance Officer and Policy Maker) on the basis of applying the two inclusion criteria for the study.
4. The selected educators were then contacted directly either via phone and/or email or with the principal as an intermediary to set up a suitable time to conduct the School-Based FBA Interview.

7.3 Description of the School-Based FBA Interview

The School-Based FBA Interview contained questions which were developed in line with an in-depth review of studies, spanning from 1997 to 2011, which evaluated

FBA processes and procedures devised for use in applied contexts such as schools (see: Appendix B for examples of the studies which formed the basis of this review). This review ensured that the interview questions closely matched the FBA models and techniques of greatest familiarity to educators. This interview was designed to be semi-structured and included a predetermined list of questions but also allowed the interviewer to probe a response to gain additional data, provide clarification of a question, or to have control over the order of questioning in the event that the participant had already addressed an interview area. Semi-structured interview formats have been shown to offer greater flexibility and spontaneity to the collection of data than fully structured interviews (Hunmphyre & Lewis, 2008) whilst also providing a framework which allows for the exploration of complex issues such as those that are encountered by educators responsible for dealing with the multifaceted behaviour of students with ASD. The predetermined interview questions were designed to be open in order to facilitate discussion of participants' experiences and knowledge of systems within their own schools. This was in accordance with Wengraf's (2001) recommendations on the use of semi-structured interviews in instances where most responses to questions are varied and cannot be predicted.

The School-Based FBA Interview was divided into two separate sections: Section A was comprised of twenty-five questions related to participants' educational practices, implementation of behavioural assessments, and development of subsequent interventions, Section B included two clinical vignettes based on hypothetical students which presented with the types of challenging behaviours often seen in students with ASD. These sections are presented in detail below.

7.3.1 Section A – School-Based FBA Interview Questions

The 25 interview questions (Section A) were divided into six sub-sections, allowing for better organisation of topics and creating coherency between lines of questioning (See Appendix C for School-Based FBA Interview Section A). The sub-sections encompassed:

1. Demographic information contained five questions which provided data on the participant's features of age, gender, position within the school, years of experience in education, and formal qualifications gained. A further two questions were also asked regarding previous experience educating students with ASD as well as any additional qualifications or training obtained. No information was sought on the participant's school or any additional professional characteristics to avoid creating any risk to participant privacy. This subsection had two aims; the first was to elicit key participant characteristics that were likely to impact the content and detail of answers to interview questions and the second was to explore the range of experiences participants had amassed in supporting/teaching students with ASD. The questions in this section were also used, early in the interview, to confirm that participants met the two inclusion criteria for the study.
2. Roles and responsibilities of school personnel involved in FBA in the school environment were identified in this section. Two questions were asked regarding (1) who within the school was responsible for decision-making around adjustments and behavioural interventions of students with ASD, and (2) the capacity in which the identified individuals were involved in these processes. One question was asked regarding the participants own role within these adjustments and behavioural interventions processes and the final

question asked if participants felt confident in working with ASD students within their current role. These lines of questioning were regarded as integral in understanding the school personnel and systems which served to identify, assess and develop interventions for ASD students who displayed challenging behaviour.

3. FBA assessment procedures for challenging behaviour exhibited by students with ASD included four questions collecting data on: (1) how assessments methods were selected, (2) who conducted the assessments, (3) what the intended outcomes of assessments were, and (4) how the data collected through assessments were used in intervention decision-making and planning. The questions in this section were designed to identify specific functional assessment methods used by educators to aid comparison with best-practice guidelines (outlined in Section 4.4 pages 45-46).
4. FBA intervention procedures for challenging behaviour exhibited by students with ASD. Participants were asked five questions which provided data on: (1) how interventions were selected, (2) what types of interventions were used, (3) from where intervention strategies were sourced, (4) whether selected interventions were individualised, and (5) how it was determined whether interventions were successful. This line of questioning aimed to determine any links between assessment results and intervention planning, whether interventions were evaluated once they had been implemented by an educator, and (if so) whether modifications were made to interventions to increase their effectiveness.

5. Resources for students with ASD – This sub-section comprised two questions.

The first question related to educators' knowledge of resources within their school which may support them in assisting their students with ASD. The second question concerned educators' knowledge of any external resources that might facilitate better service delivery. These questions were included to identify resourcing gaps or barriers which educators believed impacted upon their ability to provide adequate service delivery to students with ASD.

6. Knowledge of ISP and EAP in their school environment. Two questions were asked, the first required participants to discuss whether ISP and EAP informed their practice with students with ASD. The second asked whether educators found these school processes useful in their daily practice. The ISP and EAP processes have been developed, in part, to drive the delivery of interventions such as FBA to address student needs and enhance positive engagement. These questions aimed to explore whether educators were familiar with the policy requirements for individualised educational adjustments and the extent to which those requirements impacted upon educators' daily decision-making in relation to assessing and remediating the challenging behaviour of their students with ASD.

7.3.2 Section B – Clinical Vignettes

This aspect of the School-Based FBA Interview (i.e., Section B) comprised two clinical vignettes which were presented to participants once they had responded to the 25 questions (See Appendix D for FBA Interview Section B – Clinical vignettes). The aim of these clinical vignettes was to triangulate the data obtained via direct questioning by requesting that participants “apply” their FBA knowledge to two hypothetical students

with ASD who also exhibited challenging behaviour. Of underlying interest to the clinical vignettes was the question of whether self-disclosed approaches to applying FBA (assessment and intervention phases) matched the best-practice guidelines extracted from the in-depth review of studies described on Section 4.4 (page 45). The combination of direct questions plus problem-solving of via reflection on the clinical vignettes was deemed to fulfil the requirement for triangulation recommended by Greene et al., (1989) as it utilised two separate forms of qualitative data-collection designed to provide opportunities to examine both convergence and divergence of data analysis results for each participant.

The clinical vignettes were developed by a panel of two researchers who had a minimum of 10 years' experience working in Education Queensland schools with a specific focus on assisting students with ASD across functional level (i.e., low to high functioning) and challenging behaviour severity (i.e., moderate to high intensity) The focus of both clinical vignettes was on challenging behaviour (i.e., behavioural outbursts, and repetitive behaviour/vocalisations) which stemmed from secondary difficulties (i.e., difficulty with emotional regulation and attentional difficulties) associated with the expression of ASD. This was consistent with research (e.g., Ozonoff, South & Provencal, 2005; Troyb, Knoch & Barton, 201) which suggests that secondary difficulties are more likely to become the principal focus of intervention as they cause significant distress to the individual. The clinical vignettes were designed to be applicable to all educator sub-groups in both primary and secondary education settings. Therefore, no age or grade level features were attached to the hypothetical students in the vignettes. The clinical vignettes were designed for the educators to identify potential assessment targets and to provide them with the opportunity to recommend any processes they might engage in to assist

each hypothetical student. The first clinical vignette presented a student diagnosed with Asperger's Syndrome who had been found to be of average intelligence based on WISC-IV testing. This student was performing adequately in terms of the academics, however, was experiencing social and emotional disturbances which had been raised as concerns by the student's parents. The second vignette presented a student with Autism who was suspected of having a further diagnosis of Attention Deficit Hyperactivity Disorder. This student was described as having a heightened sensory profile, with particular sensory sensitivity towards touch and sound. This student was engaging in behaviour that would be considered disruptive within the classroom. This student was not engaging in academic tasks and was being excluded from classroom and group activities.

7.4 Procedure for Administration of the School-Based FBA Interview

Following its initial development, the School-Based FBA Interview was trialled and reviewed by two independent educators who had experience in behavioural assessment and development and implementation of Individual Education Planning within State Schools within the South-Eastern region of Education Queensland. Their evaluation of this interview was sought on issues of omission (i.e., leaving out important questions or information), commission (i.e., questions misinterpreting or misrepresenting concepts) (Gay, Mills, & Airasian, 2006) and to ensure question clarity, question relevance, and to increase validity. Based on their feedback, changes were made to terminology and acronyms to ensure that these were consistent with the language used by educators with the Education Queensland school system. Ethical clearance for this study was obtained through the Bond Human Research Ethics Committee.

All FBA interviews were completed by participants on-site at the schools in which they worked. Those interviews were conducted in a private location of the interviewee's choice to maintain confidentiality. The 25 questions of Section A of the School-Based FBA Interview were presented to all participants verbatim (as written in the interview protocol) and, once their initial response was recorded, the researcher used non-directive probing, as per the requirements specified by Cresswell (1994), to encourage discussion or to expand upon topics relevant to the subject under discussion. In particular, probes were implemented when additional information was required on the specific FBA procedures applied to assess/remediate student behaviour, and to clarify participant understanding of any technical terms they used. The researcher used both verbal and non-verbal micro-skills throughout the interview for the purpose of building rapport with participants and providing a non-directive probing for further information (Ivey, Ivey & Zalaquett, 2010) (see: Appendix E for list of micro-skills used during the FBA interviews)

The two clinical vignettes (School-Based FBA Interview: Part B) were presented to all participants using the same three-step administration sequence to ensure that instructions and other verbal content plus presentation procedures remained constant across the participant group. First, the participant was presented with the two questions they would be required to answer (1) What do you believe are the important factors in addressing this student's behaviour?, and (2) Can you outline what you might do to help this student overcome his/her behavioural difficulties? Next, participants were presented with the clinical vignette on a single A4 page to read in their own time. Then, once participants had indicated that they had finished reading the vignette, they were again prompted with each question. No additional prompts or probes were given during the responses to these clinical vignettes. The vignettes were implemented to obtain data on

the participants' application of the FBA procedures and concepts that they discussed during the School-Based FBA Interview: Section A and the strategy of not providing additional prompting was deemed necessary in order to obtain unbiased responses.

All responses were recorded via hand-written note-taking in full during the course of the interview by the researcher and were transcribed into a digital database for further analysis after completion of each interview. No additional recording devices were employed during the interviews as it was believed that this would negatively impact on the veracity of participants' responses. All written information was de-identified to maintain confidentiality and no school identifiers were provided to ensure privacy.

7.5 Analysis of Data

Study 1 was exploratory in nature and, as a consequence, directional hypotheses for testing were not specified. Therefore, no statistical comparisons or orthogonal contrasts were conducted. Participants' responses were formed into tables for visual examination and blind assortment into categories so that the overall data could be reduced into more structured response sets in a standardised manner. Initial frequency analyses were conducted to ascertain mean and SD values for response categories. The data and coding frame were entered into NVivo 9, a computer assisted, software program designed for qualitative data analysis.

7.6 Methods for Conducting the Thematic Analysis

The data were analysed in accordance with thematic analysis guidelines (as described in section 6.3.4 pages 81-83) which were used to systematically identify

meaning and trends. A coding frame was developed to guide the thematic analysis including both inductive codes grounded in content, and FBA procedural codes based on FBA research. The adaptive 7-step thematic analysis process (see: Chapter 6 page 89 for the 7-step thematic analysis process) was applied to all participant responses. In accordance with the guidelines proposed by Joffe (2012) 50% of the total datasets were independently coded by both the Principal Researcher and the Student Researcher in order to obtain a reliability measure. The application of these seven steps to participant responses is detailed below.

7.6.1 Transcription and Familiarisation of Data

Transcription of the interview responses was a precursor step to the analysis of data, which was conducted before coding of data began as per Braun and Clarke's (2006) guidelines. Following the conclusion of each interview, participant responses were transcribed verbatim from the long-hand notes into a digital document. The completed transcripts were read twice before the analysis process commenced so as to become fully conversant with the close-detail contained therein. This process of familiarisation with the data sets to be coded provided ideas for coding during later steps of the analysis as per McLeod (2011) and Joffe's (2012) recommendations (outlined in chapter 6 page 78-80).

7.6.2 Initial coding and development of a code manual

Initial codes were created to organise the participant responses via line-by-line coding which produced initial labels to aid in creation of a coding manual. These codes were generated utilising a data-led approach guided by careful analysis of the content of the data as per Fereday and Muir-Cochrane's (2006) guidelines. As such, no theoretical elements were applied in the development of codes. Definitions of codes were devised

and input into the coding frame to aid in the generation of preliminary themes. Visual representations of the data were created via tabulation of these initial codes

7.6.3 Testing the Reliability of the Codes

Inter-rater reliability of the coding during the data analysis was conducted via independent coding (Fereday & Muir-Cochrane, 2006). Fifty percent of the total datasets were coded by two independent coders in order to obtain an inter-coder reliability of at least 95% agreeance in accordance with the guidelines proposed by Joffe (2012). This process was implemented once the initial coding frame had been developed but before the frame was applied to the entire data set. The testing of reliability continued throughout the coding and analysis of the interview data; any subsequent changes to the coding frame resulted in further reliability testing. Following this process, final agreement of 96.7% was reached.

7.6.4 Application of the Codes and Identification of Initial Themes

The identified themes were submitted to review in order for those that did not have enough supporting data to be discarded and other themes that were considered too similar to be combined. This process was conducted by reviewing all of the collected extracts for each theme and considering whether they appeared to form coherent patterns. Whilst undertaking this stage of the analysis additional codes identified were applied and adjustments made to the coding manual. To ensure accuracy of the codes, any changes to the coding frame resulted in the re-application of reliability measures to ensure that new or amended codes maintained objectivity.

7.6.5 Review of Themes

The initial themes were reviewed and refined resulting in further removal of unsupported (by the data) themes, condensing of themes high in similarity, and separation of disparate thematic fragments into distinct themes. Fereday and Muir-Cochane (2006) suggest that fabricating evidence can be a common issue whilst conducting these final phases of analysis as researchers can unintentionally and unconsciously see data which they expect to find. Due to this caution, during this step all definitions of themes were reviewed and checked for consistency, and again any changes made to the definitions were subject to further reliability testing.

7.6.6 Connecting Codes and Definition of Themes

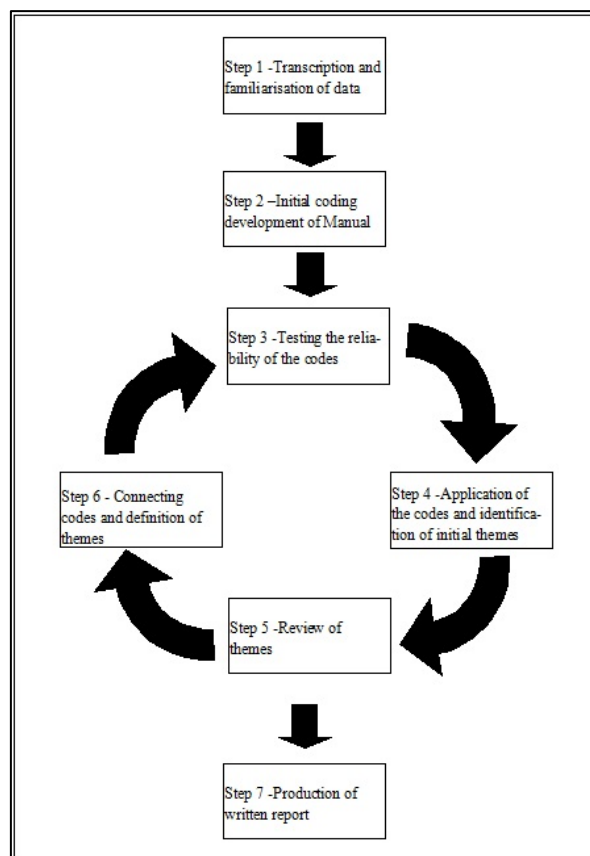
During this step each theme was reviewed independently to ensure that it was conceptually distinguished from all other themes, leading to creation of definitions and labels to characterise themes. The definitions contained within the coding frame were revised and scrutinised to ensure that they were adequately capturing the individual data points they represented. In order to obtain accuracy and precision any changes made to the definitions of themes resulted in reviews of the analysis during the previous stages. During this stage there was a continued process of identification of themes, revision of themes or development of sub-themes.

7.6.7 Production of Written Report

This final step of the analysis process involved production of the written report which occurred only when no further refinement to the themes could be achieved (Braun and Clarke, 2006).

Although presented in a linear fashion, the steps described in Sections 7.6.1-7.6.6 above were applied in a reflexive and iterative manner exemplified by additional coding in line with the principles advocated by Fereday and Muir-Cochrane (2006). Based on the results of ongoing inter-rater reliability measures previous steps were returned to in order to ensure the validity of the results and the systemic analysis and development of the themes contained therein. This is demonstrated in figure 7.1 which indicates that during steps 4-6 reliability measures were enacted continually enabling a more rigorous analysis of the participant data. This process is consistent with Tobin and Begley (2003) who suggested that using empirical measures such as reliability to inform ongoing analysis aids in legitimising the results obtained by qualitative inquiry.

Figure 7.1 – Application steps utilised in the application of the thematic analysis



Chapter 8:

Study 1 – Results

This chapter presents the thematic analysis of the data obtained via administration of the School-Based FBA Interview to 40 participants involved in the education or management of students with ASD. The thematic analysis process was applied to the interview transcripts to identify the key themes evident in participants' responses. Those themes were collapsed into the following five key analytical categories: (1) Educator training and competencies (2) Application of FBA data-collection and data-interpretation techniques (3) Application of FBA intervention techniques (4) Educators' understanding of behavioural assessment and intervention processes relating to students with ASD (5) Application of FBA procedures during review of two vignettes written to represent the behavioural difficulties typically experienced by students with ASD in the classroom and wider school environments.

8.1 Themes Relating to Educator Training and Competencies

Themes relating to educator training and competencies were derived from participant responses to Section 1 of the School-Based FBA Interview. This section contained two questions which required participants to identify whether they had undertaken any training or professional development specific to: (1) ASD and its impacts on student functioning and, (2) application of FBA as a process for addressing the behavioural difficulties associated with ASD and other developmental disabilities. Whilst all 40 participants reported they had gained experience in educating and supporting

students with ASD in the school context, they differed in relation to whether they had attended any additional autism- and/or FBA-specific training. Only 37.5% of participants indicated that they had received training in either FBA or ASD; of those 37.5% only 20% reported that they had undertaken training in both ASD and FBA. Differences in training focus were identified in relation to educator sub-group (see Table 8.1 below for the number of participants who attended training in relation to their primary role). Educators in support roles were most likely to have received autism-specific training, with 50% of Guidance Officers, 30% of Special Education teachers, and 20% of Policy Makers reporting that they had participated in training to advance their knowledge of ASD. In contrast to this, none of the classroom teachers who completed the interview had attended such training. Whilst fewer of the 40 participants had engaged in FBA-focused training, the trend for support educators such as Guidance Officers and Policy Makers in accessing training in FBA plus classroom practitioners not receiving this type of training was maintained.

Table 8.1 – Number of Educators’ who Attended Additional Training Relating to ASD and/or FBA

	Mainstream Teachers (<i>n=10</i>)	Special Education Teachers (<i>n=10</i>)	Guidance Officers (<i>n=10</i>)	Policy Makers (<i>n=10</i>)
Training related to ASD	0	3	5	2
Training related to FBA	0	1	2	2
Total number who received additional training in either ASD or FBA	0	4	7	4

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

Educators were also asked whether they felt they possessed the capabilities to address the particular behavioural difficulties of students on the autism spectrum. Three sub-themes were identified based on three patterns of participant responses to this question. Whilst 42.5% of participants reported that they felt completely capable (subtheme 1) (e.g. *“Yes, but I haven’t had a whole lot of them at once”*), 37.5% stated that they felt partially capable with some reservations (subtheme 2) (e.g., *“Most of the time yes ... but if they are physical or aggressive, no.”*), and a further 20% indicated that they did not feel capable working with this student group (subtheme 3) (e.g., *“[It] does not always feel like I have the skills to deal with the kids”*). Educator’s self-perceived capabilities in supporting students’ with ASD were strongly associated with the role they fulfilled in the school environment. Responses which adhered to subtheme 1 (i.e., “felt completely capable”) were found for 80% of Special Education Teachers versus only 20% of classroom teachers who were more likely to deliver interview responses which reflected subtheme 2 (“felt partially capable with some reservations”). Interestingly, classroom teachers were also more likely to report that they “did not feel capable” of supporting students with ASD with 40% of this participant group responding in relation to subtheme 3.

Support educators demonstrated greater inter-role variability when estimating their own capabilities and were more likely to adhere to subtheme 2 in their responses with 40% Guidance Officers and 50% Policy Makers reporting that they “felt partially capable with some reservations”. Further, the analysis of interview content from support educators suggested that fewer (i.e., 20%) of them felt incapable of assisting students on the autism spectrum (subtheme 3) (see: Table 8.2 for participants’ beliefs about their capabilities in relation to their primary role)

Table 8.2 – Educators’ Belief on their own Capability of working with students with an ASD

	Mainstream Teachers (n=10)	Special Education Teachers (n=10)	Guidance Officers (n=10)	Policy Makers (n=10)	Total (n=40)
Capable	2	8	4	3	17
Mostly Capable/Expressed reservations	4	2	4	5	15
Not capable	4	0	2	2	8

The review of interview content revealed three specific issues which led educators to experience reservations regarding their capabilities in supporting students with ASD. Participants were less likely to report greater confidence when reflecting on students believed to be ‘lower functioning’ prevented (e.g. *“I think certainly with Asperger’s Syndrome I feel fairly comfortable with that. Not with severe Autism though”*), students with associated behavioural difficulties that would be seen as challenging to overall classroom management (e.g. *“...it depends on what they were like. [I am] not keen on the full-on ones, but obviously we’d adjust”*), or their own lack of experience or exposure working with students with an ASD (*“Right now probably below average I would say [I am] probably out of touch”*).

8.2 Themes Relating to Educators’ Understanding of Behavioural Assessment and Intervention Processes Relating to Students with an ASD.

Section 2 of the School-Based FBA interview asked three questions in relation to behaviour management of students with an ASD within the educators’ own schools. Educators were required to describe (1) which people within the school were involved in the care and education of a student who has been diagnosed with an ASD, (2) what capacity were these people involved in the decision making process regarding the

selection and implementation of behavioural assessment and intervention, and (3) the educators own responsibilities in this process.

Analysis of educator responses to questions 1 and 2 prompted the emergence of a significant theme, as educators described two concurrent behaviour assessment systems within their schools. While variation existed between schools in relation to how these systems were enacted (demonstrating significant complexity to the assessment and intervention systems within schools and the roles of the educators in adhering to these systems) a number of similarities were identified across schools. The two co-occurring systems identified through participants' accounts were: (1) formal systems, which were used for the verification of an ASD diagnosis, application for funding and/or additional resourcing and the development of an ISP document, and (2) informal systems which existed outside of Education Queensland policy which were used to develop an understanding of individual students, communicate between educators and parents about student difficulties, and develop daily strategies for supporting individual students. These two separate assessment systems created distinct yet related pathways of student-based information gathered via assessment, both formally and informally within schools (see table 8.3 below for Description of School Systems for Providing Support to Students).

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

Table 8.3 – Description of Educator Processes for Providing Support to Students with an ASD Diagnosis

	Formal Processes	Informal Processes
Identification of Student Difficulty	Educators who identify student difficulties record them on OneSchool or contact Special education/Guidance Officers to begin assessment.	Mainstream teachers and/or teachers' aides identify potential student difficulties and discuss with colleagues.
Assessment	<p>Guidance Officers conduct standardised testing (i.e., intelligence testing).</p> <p>HOSE or Administrator (i.e., Deputy principal or Principal) may conduct behavioural observations or may ask a special education teacher to conduct observations.</p> <p>Curricula-based assessments are used to identify academic difficulties.</p>	<p>Mainstream teachers and/or Special Education Teachers may contribute their observations.</p> <p>Parents may be contacted and asked to provide anecdotal information.</p> <p>Discussions may occur between educators sharing experiences of the individual student.</p>
Analysis	<p>Education Support Committees compile assessment results.</p> <p>Education adjustment plans determine levels of disability/impairment.</p>	<p>Individual student difficulties are discussed by staff outside of the classroom.</p> <p>Informal analysis occurs amongst educational staff both before and after this formal process.</p>
Selection of Intervention(s)	<p>Resources are allocated based on government approval of the EAP document.</p> <p>Individual Support Plans (ISP) are developed by Education Support Committees.</p> <p>Modifications to curriculum or instruction are identified and recommendations to teachers are incorporated in the ISP.</p>	<p>Classroom teachers develop their own strategies for implementing ISP recommendations.</p> <p>Daily student management strategies are developed or identified outside of the ISP document.</p>
Implementation of Intervention(s)	<p>ISP are present and referred to by each teacher in assisting the student access the curriculum, develop communication skills, support social and emotional wellbeing and maintain student safety.</p> <p>Adjustments and modifications are made based on recommendations and allocations awarded by the EAP process.</p>	<p>Teachers implement daily management strategies and classroom modifications</p> <p>Administration staff assists with behavioural referrals.</p> <p>HOSE or special education departments provide assistance with daily management of students or selection of daily intervention strategies.</p>
Evaluation/Follow-up	Education Support Committees review and revise ISP.	Individual student progress monitored by classroom or special education teachers and/or teachers' aides.

The conceptualisation of both formal and informal systems for assessing, analysing and intervening with students allowed for a greater understanding of how individual

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

educators were likely to function within the systems. Figure 8.1 presented below represents a graphic representation of the roles educators were most likely to have within these systems based on their reported responsibilities. This figure demonstrates a compelling finding, that the sub-groups of educators (i.e., Guidance Officers and Policy Makers) most likely to be assessing students with ASD, compiling and analysing these assessment data, and selecting interventions were unlikely to be the same educators who implemented and monitored these interventions or adjustments. Educators' descriptions of assessment, behavioural planning, and intervention demonstrates that the formal behavioural plans that are created via consultation and assessment often do not always inform the choice of intervention selection.

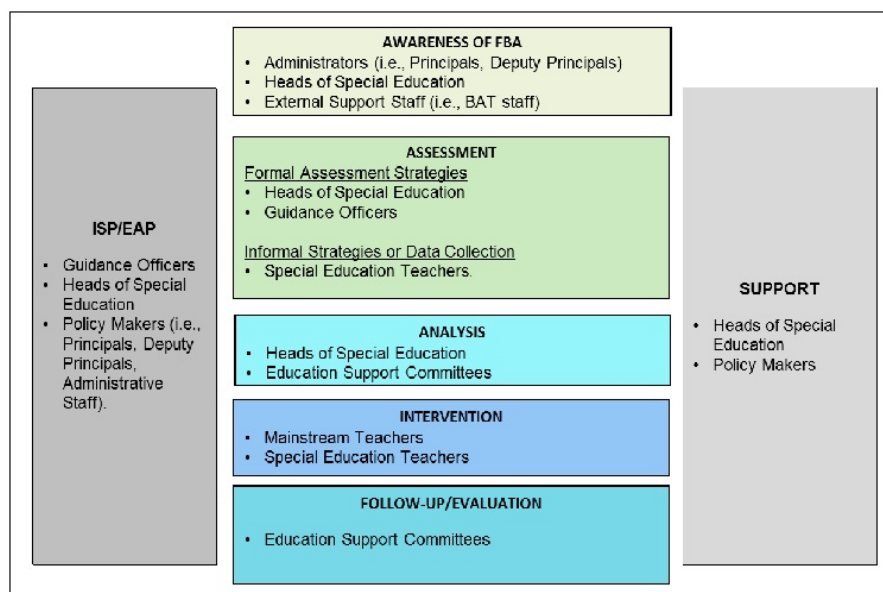


Figure 8.1 – Diagrammatic Representation of Specialist Personnel and Familiarity with FBA Processes

When asked to discuss their own role and responsibilities within this process the majority of educators (68.5%) described behaviour management processes that were consistent with those outlined above in table 8.3. However, the remaining 32.5% of educators interviewed indicated confusion about the implementation of behaviour

management systems within their own school. The review of interview content revealed two specific issues which led educators to experience confusion regarding their capabilities in supporting students with ASD. Of the 32.5% who indicated confusion, 22.5% of educators expressed a lack of knowledge regarding specific assessment policies or procedures and incorporated confusion about how they were enacted (subtheme 2):

“I know I have to fill out some things but I’m not sure what they are. I think they help with the diagnosis but I am not sure of what the assessments are”

“I’m not sure what they do but I get shown the assessments and data-collection and then it goes into their file.”

The remaining 10% indicated that they did not possess any knowledge of these policies or procedures (subtheme 3):

“I don’t know about any assessments of behaviour or anything outside of the curriculum. I haven’t had much support with knowing what to do.”

“I don’t know what assessments they use. There are special needs meetings that happen fortnightly.”

“There are no formal processes. It is down to the MT noticing that the student is having issues.”

“Nothing is done outside of curriculum.”

Inter-role variability existed when expressing confusion around role and responsibilities. Policy Makers were most likely to adhere to (subtheme 1) in their responses with not one educator from this subgroup expressing any confusion regarding their role. The remaining three subgroups were more likely to express confusion with 30% of Mainstream teachers, 30% of Special Education Teachers, and a further 20% of Guidance Officers adhering to (subtheme 2) in their responses. (Subtheme 3) was only represented by Mainstream Teachers with 40% of this subgroup expressing a lack of knowledge regarding student-based assessment procedures.

8.3 Themes Relating to the Application of FBA Data-collection and Data-Interpretation Techniques

Themes relating to the application of FBA data-collection and subsequent data-interpretation techniques were derived from Sections 3 and 4 of the School-Based FBA Interview (described in chapter 7 page 90). Initial questions regarding student-based assessment and data-collection were asked in section 3, however, 62.5% of the participants interviewed continued to provide additional information regarding assessment practices while describing their intervention processes in section 4. Due to this, themes for data-collection were not coded based on responses to specific questions but rather on any description of behavioural assessment techniques in either of these interview sections. In the application of the coding frame to participant responses, 'behavioural assessment' was defined as any planned attempt to measure, quantify or gather information on individual student responses to gain a better understanding of student behaviour.

Whilst 92.5% of educators suggested that student-based, behavioural assessment was occurring within their school, the in-depth analysis of their responses revealed a paucity of subthemes and this might suggest limited knowledge in FBA-based assessment. Of the forty educators interviewed, only one participant (a guidance officer) mentioned FBA in regard to the assessment of student behaviour. Based on identification of educators' methods for collecting behavioural data the FBA procedures of systematic data-collection, collation of behavioural data, and identification of possible behavioural function based on data trends were not reflected in participants' responses. Of the 92.5% who discussed student-based, behavioural assessment 62.5% of the educators' descriptions of data obtained via assessment demonstrated little knowledge or understanding of how

such data from students could be used to assist in the development of needs-based interventions:

“[data is] just notes we write ourselves.”

“In general data is collected... this might be any behavioural incidents and adjustment plans for kids.”

Immediately following any description of data-collection processes, educators were also prompted for the intended outcomes of the behavioural assessment processes they had described. Analysis of this question produced two distinct subthemes: 70% of the educators interviewed indicated that student-based behavioural assessments were being used for purposes other than understanding challenging behaviour (subtheme 1), while only 30% of the educators interviewed described these data-collection strategies as directly informing the development of a functional hypothesis to aid understanding of challenging behaviour (subtheme 2).

Evidence of subtheme 1 was represented consistently across all sub-groups of educators (Guidance Officers 80%, Special Education Teachers 70%, Policy Makers 70% and Mainstream Teachers 60%) indicating that student-based behavioural assessments were used within their schools for reasons besides the selection of intervention strategies. Of the educators interviewed, 67.5% proposed that student-based assessments were being implemented for verification of a disability or for report writing in order to obtain funding:

“Yes some of the assessment is for funding. I would like to say that more of it is used to develop plans but that does not always happen.”

“Predominantly these assessments will be around funding and support for the student.”

“If I’m being cynical then it’s [student assessments] about the funding.”

8.4 Themes Relating to the Application of FBA Intervention Techniques

Themes relating to the application of FBA intervention techniques were derived from educator responses to Section 4 of the School-Based FBA Interview (described in chapter 7 page 90). This section contained five questions regarding the selection, implementation and evaluation of FBA intervention techniques for students with ASD within the participant’s own school. In the application of the coding frame to participant responses, ‘behavioural intervention’ was defined as any planned attempt to decrease challenging behaviour, increase desired behaviour, or teach adaptive, replacement behaviour. Themes for this section were organised into the selection of behavioural interventions and the evaluation of intervention success and are outlined in sections 8.4.1 and 8.4.2 below.

8.4.1 Selection of Behavioural Interventions

A significant theme emerged from the question ‘How are behavioural intervention techniques selected for implementation?’ Educators’ previous indications that assessments did not inform intervention were upheld through the selection of behavioural interventions. Interventions were commonly selected without being linked to behavioural data-collection during assessment, or to development of a functional hypothesis. Educators reported that interventions might have been implemented without access to behavioural data:

“It can take months for proper assessment. In the meantime interventions are put in place that are identified along the way”

“Sometimes it will be down to FBAs and formal meetings but more often than not it is reacting to that child on the day.”

They also reported that student interventions were applied with little knowledge of whether they would be successful:

“It’s [selection of intervention techniques] really just case by case and what we think will help.”

“Intuitive decisions are made about how to deal with these students’ issues.”

“They are decided daily. It is not always a process. Sometimes it is just through trial and error.”

The use of intervention strategies that did not directly link to behavioural data-collection via assessment was present across all four sub-groups of educators (Mainstream Teachers 70%; Special Education Teachers 60%; Guidance Officers 60%; Policy Makers 50%). However, when directly asked whether educators believed that classroom intervention was needs-based, 77.5% confirmed that this was the case in their school context:

“Very much. Generally even when it comes down to tokens and clients. Even those are very individualised.”

“Yes and I think we are starting to keep better records of the strategies and interventions used.”

“Very much so. We try to tailor them towards the needs of the kids. And that is what the committee is all about too. To try and meet specific treatment needs.”

This self-reported impression was most likely to be maintained by teachers with 100% of special education teachers and 90% of mainstream teachers expressing that they considered the interventions they implemented to be needs-based. Those in support roles were less likely to uphold this impression with only 60% of Guidance Officers and 60% of Policy Makers making the same assertion.

8.4.2 Evaluation of Intervention Success

Participants were also asked how they determined whether a behavioural intervention was successful, or unsuccessful, in creating desirable behaviour change or supporting the student with ASD. Their responses indicated that evaluation of student change did not involve data-collection procedures capable of leading to objective measurement. Over half of participants (57.5%) indicated that decisions made regarding the effectiveness of classroom-based interventions for students with ASD were often made in the absence of behavioural data:

“I have started to record the interventions used with my kids ... but unfortunately data-collection tends to occur after the fact.”

“At the end of the day we tell each other if something worked or not. Feedback from other special ed [sic] teachers and from the HOSE. It is actually more anecdotal it comes from each other’s feedback, parents’ feedback, and we just end up noticing that there are changes.”

“The lack of behavioural referrals and reduced admin interventions. We know when it is working.”

“[it’s based on] ...the comfort level of the child. Also, are they coping in that situation? Are they succeeding at the task or activity?”

The lack of behavioural data-collection through ongoing recording directly impacted upon the evaluation of student behaviour and the subsequent review of effectiveness of treatment:

“I try to talk to the child and gauge their understanding. Yeah I would try to change things if they needed it or if they weren’t working.”

“Most of the time I just have to figure it out as I go and the way the child is responding to the work. I have to think on my feet a bit but that’s what makes teaching challenging.”

A smaller percentage of educators (22.5%) also reported that they did not expect any behavioural interventions to be effective for a prolonged period of time for this group of students:

“You don’t expect any strategy to be effective for long. But it depends on how much it should work. You make amendments if there is no change which means trying to read the kids.”

Evidence of this sub-theme was more likely to occur in teaching roles with 100% of mainstream teachers and 80% of special education teachers indicating a lack of behavioural data to support intervention effectiveness. In contrast to this, participants in support roles were more likely to evaluate student-based behavioural intervention using behavioural data and were also more likely to acknowledge deficiencies in the evaluation of student behaviour:

“Now that is something I don’t think we do well ... not as well as it should be. Reviews should occur but I don’t think they happen often. The HOSE will check up through the IEP in respect to programs that have been identified but mostly anything we do will be tied back to resources.”

8.5 Themes Relating to the Application of FBA via Clinical Vignettes

Part B of the School-Based FBA Interview presented participants with two clinical vignettes which were used to triangulate (corroborating one form of data analysis with another) the data obtained in Section A of the interview by providing another medium to gather information on the applied processes of FBA. For both vignettes, participants were provided with the key pieces of information needed to apply any FBA knowledge they possessed. Each case provided educators with information on a challenging behaviour which could be framed as a target behaviour within an FBA framework,

information was also provided on possible antecedents and consequent factors that could be linked to the target behaviour and/or provide the basis for a preliminary functional hypothesis but would require further investigation to confirm that hypothesis. Each vignette also contained distractors (i.e., information from secondary sources or events which were not directly related to the challenging behaviour) which might provide the basis for possible intervention but were unsubstantiated, assumptive or value-driven. In response to the vignettes, participants were prompted with two questions requiring them to identify (1) potential assessment targets and (2) any processes that they might engage in assisting each student.

Presentation of these themes has been made in relation to descriptions of the targets that the educators identified as being important in working with the hypothetical students presented in these clinical vignettes (see sections 8.4.1 and 8.4.2). A separate coding frame was developed which was applied across both vignettes (see: Appendix F for definitions and examples of the targets that were identified across the two clinical vignettes).

8.5.1 Targets for Vignette 1

The first vignette described a student with Asperger's Syndrome who exhibited two challenging behaviours (i.e., loud grunting and continual squirming whilst sitting down) which served a communicative purpose in indicating that the student was experiencing escalating distress. The vignette also contained three antecedent-based assessment targets which, if investigated via observation and data-recording, could assist educators in understanding the possible contributors to the challenging behaviour. Those

assessment targets were: (1) classroom distractions (target 1), social interactions with other students (target 2), and possible feelings of anxiety (target 3). Three distractors, which did not affect the likelihood of the challenging behaviour, were also placed in the vignette. Those distractors were: (1) subtest results from a WISC-IV, (2) academic performance, and (3) peers' perceptions of the student. Cognitive subtest results were considered a distractor in this vignette, as although they are likely to contribute to problems, they exert a broad effect on ASD behaviour and are not assessed within the context of a classroom FBA which would look at immediate contextual factors.

Despite the student being described as expressing challenging behaviour that might have indicated emotional discomfort or distress, only 10% of all educators mentioned these behaviours in addressing the vignette. Of this 10% of educators, 7.5% were special education teachers while the remaining 2.5% were Guidance Officers. Of the three potential assessment targets, 47.5% of educators identified social interactions with peers, 10% identified classroom-based distractions and 7.5% identified possible feelings of anxiety.

Educators were more likely to identify the distractors as targets for assessment with 47.5% targeting the intelligence findings, 42.5% identifying others' perceptions of the student, and 12.5% focusing on the academic performance of the student. Two additional targets were identified by educators which were not explicitly present in the vignette. Communication difficulties were referenced by 37.5% of educators and a further 10% identified the need to investigate task difficulty or the need for educational

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

adjustment. Differences were present in the targets identified by the educator sub-groups (See: Table 8.4 below)

Table 8.4– Comparison of Targets for Vignette1 by Educator Role

	Mainstream Teachers (n=10)	Special Education Teachers (n=10)	Guidance Officers (n=10)	Policy Makers (n=10)
Assessment Targets				
Classroom Distractions	0	3	1	0
Social Interactions with Peers	4	2	10	3
Anxiety	0	0	1	2
Distractors				
IQ results	2	4	10	3
Academic Performance	3	0	1	1
Others perceptions of the student	6	7	1	3
Targets not present in Vignette				
Educational Adjustment/Task Difficulty	3	0	1	1
Communication Difficulties	4	6	4	1

Guidance Officers were most likely to target social deficits and the results of the intelligence testing with all 100% identifying these targets. Special education teachers were most likely to focus on other students' perceptions of the student and communication difficulties. Mainstream Teachers were more likely to identify the perceptions of the student by his peers (60%) and targets relating to communication (40%) and social deficits (40%). They were also the most likely of the four sub-groups of educators to identify the need to access or develop ISP documentation on the student. They were the least likely to

target the results of intelligence testing with only 20% focussing the results of the cognitive performance.

8.5.2 Targets for Vignette 2

The second clinical vignette described a student diagnosed with Autism. The challenging behaviour this student presented was defiance to teacher instructions. Information was provided on common consequent factors which could be reinforcing the challenging behaviour. This behaviour followed a chain, whereby if allowed to escape, the student's challenging behaviour would decrease but if the student was instructed to return to an unwanted task then the student was likely to escalate their behaviour to physical actions such as hitting and scratching. Two potential assessment targets were placed within the vignette which could be investigated to assist in understanding the students challenging behaviour: (1) task preference, (2) response to classroom instruction. Three distractors were also placed in the vignette which did not relate to the challenging behaviour. These were: (1) the parent's attitudes towards schooling, (2) sensory difficulties of the student, and (3) disruption to the class. Sensory difficulties were considered a distractor in this vignette, as although they are part of the ASD profile and likely to contribute to problems, they exert a broad effect on ASD behaviour and are not assessed within the context of a classroom FBA which would look at immediate contextual factors.

All 40 participants identified the physical aggression as a target for behavioural change; however, significant variation occurred in relation to the factors they chose to investigate to help understand the challenging behaviour. Of the two potential assessment

targets 27.5% of educators identified the student's responses to classroom instructions as being a significant factor in understanding the challenging behaviour, while only 5% identified task preference. Additionally, of the 40 participants interviewed, 17 indicated that they found the behaviour-problems expressed by the student too difficult to manage and would require additional assistance if confronted with this student.

Differences were present in the assessment targets identified by the educator sub-groups (See: Table 8.5 below). Of the three distractors, sensory difficulties were identified by the majority of educators (52.5%) who reported the importance of these factors in understanding the student. Classroom disruption was also identified by 25% of the educators, however, Policy Makers were most likely to identify that this student was engaging in behaviour that would be considered disruptive within the classroom with 60% focussing on the student not engaging in academic based tasks. This was in contrast to the other sub-groups of educators as only 20% of Mainstream, 20% of Special Education Teachers and 10% of Guidance Officers identified the classroom disruption as a significant assessment target.

Table 8.5 – Comparison of Targets for Vignette2 by Educator Role

	Mainstream Teachers	Special Education Teachers	Guidance Officers	Policy Makers
Assessment Targets				
Task Preference	1	1	0	0
Response to classroom instructions	2	2	1	6
Distractors				
Parent's Attitudes	4	0	2	1
Sensory Difficulties	6	8	5	1
Classroom Disruption	2	1	1	6

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

Targets not present in Vignette

Emotional Needs of the Student	3	7	6	8
Others Perceptions of the Student	0	0	1	0
Intelligence testing	0	1	6	0

Despite not being mentioned in the vignette, emotional factors were also considered to be important by educators with 60% of all participants identifying the emotional needs of the student as important:

“Jenny is just frustrated because no one understands her. This is a big one for teachers with the physical violence and duty of care.”

“There seems like there an enormous amount of frustration for this little girl.”

Guidance Officers (60%) and Special Education Teachers (10%) also identified the need for Intelligence testing to understand this student; however, no other sub-groups identified this as a necessary target.

Chapter 9:

Discussion of Study 1

School-Based FBA is a systematic process in which challenging behaviours are analysed to determine their purpose prior to creation of individualised behavioural interventions designed to replace those behaviours with positive responses suited to the classroom environment. The current study aimed to explore how educators conceptualised and addressed the challenging behaviour exhibited by students with ASD via exploration of two broad issues during a face-to-face interview process. The first issue related to the amount and types of training educators had received in relation to behaviour management, and in particular, FBA. The second issue related to the methods educators used to help them understand the challenging behaviour exhibited by students with ASD. Participants were also required to report on the procedures they would apply to assist them in assessing and remediating the challenging behaviour presented in two vignettes. Therefore, participant answers to interview questions and their responses to the vignettes provided the basis for triangulating data sources.

9.1 Summary of Educator Qualifications and Perceived Capabilities in Educating Students with an ASD

The majority of educators interviewed indicated that they had received no training in regard to FBA or ASD. Educators in support roles (i.e., Guidance Officers and Policy Makers) were most likely to receive training with 55% of these subgroups identifying that they had received training in either ASD or FBA compared to 20% of the frontline staff. These findings are consistent with Helps, Newsome and Callias (1999) who surveyed 72 teaching and support staff from four mainstream schools in London involved in the

education of students with ASD. They reported that specialist staff (i.e., those employed in special education classrooms or special education schools) were significantly more likely to receive training aimed at assisting in the education and support of students with ASD. Those researchers also found that mainstream teachers were highly unlikely to receive such training even if their exposure to ASD students was quite high. Furthermore, the particularly low number of participants who reported receiving FBA training in this study was analogous with the research of O'Neill and Stephenson (2010) who solely evaluated behavioural adjustment teachers employed as consultants and behavioural experts operating in Sydney metropolitan schools. They too found very small numbers of these specialists had received in-service training in this area.

Despite educators in the current study demonstrating a relative lack of training, this did not appear to impact upon the same educators' perceived capabilities in addressing the needs of students with ASD. Mainstream and Special Education Teachers, despite being less likely to receive any form of training, were more likely to express confidence in their abilities to address the challenges of educating students with ASD. However, mainstream and special education teachers' responses to the clinical vignettes indicated that they were less likely to identify salient information on student difficulty. Mainstream teachers in particular were less likely to discriminate between salient factors that impacted on student behaviour, being less likely than the other sub-groups in the identification of relevant assessment targets and were more likely to identify extraneous information within the vignettes. These findings demonstrate an apparent mismatch between verbalised FBA knowledge and application of that knowledge to solve a practical problem.

One possible explanation for the discrepancy between reported teacher confidence in addressing ASD-based challenging behaviour and educator responses to the vignettes is that educators could be overestimating their current knowledge-base. In Emam and Farrell's (2009) investigation of teachers' tensions relating to educating students with ASD they found similar trends in educators expressing high self-efficacy in working with students on the spectrum, despite demonstrating poor understanding of autism-based difficulty. Their contention was that overestimation may occur due to increased assistance for classroom teachers from support personnel and teachers' aides to help with the day-to-day management of students' behavioural needs, thereby over-inflating confidence. While the current study does not conclusively demonstrate that such an overestimation exists within the sample, the discrepancy between reported confidence in addressing ASD-based difficulty in their students and the responses to the clinical vignettes provides substantiation that an over-inflation of educators' own knowledge of student difficulty and associated behaviour management techniques may be present. This finding also confirms the need to further investigate educators' knowledge of FBA in identifying, understanding and managing challenging behaviour.

9.2 Educators Understanding of Behavioural Assessment

Participant descriptions of behavioural assessment within their own schools also exhibited indications of a lack of knowledge regarding the intended aims and purposes of such assessments. This was particularly evident in educators' discussion of data-collection as part of the assessment of student behaviour. When prompted about data-collection within their own practice, educators did not discuss specific strategies, and instead referred to other forms of information gathering such as academic results and

diagnostic verification procedures, or referred broadly to behavioural data without being able to elaborate on specific data-collection methods. These results were also confirmed in educators' approaches to the clinical vignettes, in which they were able to identify what needed to be assessed but could not report on a viable technique for conducting that assessment.

These findings are relevant when placed alongside current Education Queensland guidelines for responding to challenging behaviour in the classroom which suggest that determining the purpose or function of behaviour should be a priority (DETE, 2015). While educators did communicate the need to gain a better understanding of their students' challenging behaviour, they appeared unable to identify specific data-collection techniques to achieve this aim which in turn suggests that it is unlikely that such understanding could be consistently gained. This is also evident in the work of others (e.g., Dunlap et al., 2000) who suggest that without an objective basis for understanding behaviour functions the chances of communicating effectively about the reasons for challenging behaviour are reasonably low. While there is little basis to conclude from these findings as to whether educators' lack of discussion on data-collection correlates to difficulties in communicating about student behaviour, it indicates that, at the very least, educators lack the consistent language and possibly understanding required to effectively communicate about behavioural function. However, researchers such as Gable et al., (1998) have suggested that, based upon current educational qualifications, generally teachers enter the profession with limited knowledge and skills necessary to collect the behavioural data needed to conduct an FBA. If the low levels of FBA training received by these educators is also taken into consideration, it seems more probable the dearth of discussion of techniques indicates that the educators may lack the knowledge needed to

meet the requirements of data-collection that are needed in order to create an empirical foundation for the development of functional hypotheses.

9.3 Translation of FBA-based Assessment Systems into Queensland Schools

The use of FBA has been widely promoted as a viable method for understanding challenging behaviour in schools thereby creating a base level of knowledge from which behavioural intervention can be generated. Educators are increasingly being required to conduct FBA in cases where challenging behaviour remains unresponsive to generic behaviour management strategies. The lack of precision and awareness about FBA concepts that was gleaned from the responses to the interview questions of this study might suggest that educators do not have the skills and knowledge which would be associated with an effective translation of FBA. This was evidenced in both descriptions of behavioural assessment procedures during the interview and in the application of FBA-based knowledge during the clinical vignettes.

While studies (e.g. Luiselli, Putman, & Sunderland, 2002; Nelson, Martella, & Galand, 1998; Scott, 2000) have identified that barriers (e.g., lack of technical knowledge in performing FBA) exist to the translation of FBA into schools, recently published research on FBA presents evidence that these barriers are eminently surmountable if school systems support the embedded use of ongoing behaviour assessment (Blood & Neal, 2007). These systems must include clear and consistent structures and routines to guide and support staff behaviour (Taylor-Green et al., 1997). In addition, processes and procedures that are clearly supported by school leadership, or that provide structure and incentives for performance are more likely to lead to staff-wide adoption of FBA (Sugai et

al., 2000). The findings in the current study highlight that achieving such support for our educators may be made more difficult as the behaviour assessment processes that the educators' reported within their schools were confusing and cumbersome, those processed did not provide clear and consistent structures and routines to assist educators. The presence of two concurrent processes (i.e., formal and informal) within schools for the assessment, analysis and intervention of challenging behaviour may not provide a clear and consistent enough basis to guide and support educators in effectively engaging in FBA. This was evident in that almost a third of the educators interviewed (32.5%) indicated confusion when describing these processes within their own school. This finding underlines a trend that has been emerging, in that if FBA is not being effectively translated into school environments, it is unlikely that it will be valued as a viable tool to understand challenging behaviour (Allday, Nelson & Russel, 2011; Hanley, 2012).

A further finding from the current study which may suggest that ongoing assessment is not embedded to assist educators to better understand student behaviour, was the reliance on support staff (e.g., Heads of Special Education) and external professionals (e.g., psychologists & psychiatrists) to assist in understanding classroom-based challenging behaviour. This was particularly evident in educators' discussion of Vignette 2 where 17 educators reported not feeling comfortable in addressing a behaviour that they perceived as being difficult (i.e., defiance towards the classroom teacher). The tendency for staff that are in direct contact with challenging behaviour to rely on external professionals to provide information on what interventions are viable is evident in several studies. Allday, Nelson and Russel (2011) conducted an analysis of 28 articles on School-Based FBA implementation from 1997 until 2010 relating to the implementation of key FBA components (i.e., data-collection, hypotheses development, and development of

treatment plans). Their investigation of current FBA research found that in 86% of the studies they reviewed, frontline teachers (i.e., classroom and special education teachers) were the ones responsible for interventions with students in the classroom, however, in 78% of these studies the classroom teacher played a passive role in the collection of behavioural data (i.e, being interviewed by others about the student) while very few classroom teachers played an active role in data collection. This is significant when considering that current research (e.g., Jenson, 2011) suggests that teachers may be able to gain pertinent knowledge about student behaviours without the need for school psychologists or district behaviour specialists. Furthermore, Jenson (2011) found that when classroom teachers are directly responsible for using FBA in the class to understand challenging behaviour, it can lead to better classroom outcomes such as: diminishing the time that the targeted student is outside of the classroom, decreasing interruption of instruction time, and reducing the focus on the targeted student to enable the teacher to assist all students. If behavioural assessment is used mainly as a reactive response restricted to a set of procedures used by “experts,” then the rich supply of information from people with whom the student interacts the most is lost (Repp, 1999). Similarly, if FBA is restricted to rigorous procedures that are unrealistic for state school settings then these procedures are likely to act as a disincentive to encouraging educators to select FBA for use in their classrooms (Allday, Nelson & Russel, 2011).

9.4 Limitations and Implications for Further Research

Whilst this study revealed a number of findings capable of clarifying educators’ knowledge and application of FBA in relation to students on the autism spectrum, it also possessed a number of limitations and, due to these, the reported results should be

interpreted with caution. The use of a semi-structured interview, while providing a high-yield of information (i.e., participant verbal responses) suited to thematic analysis, created a number of threats to internal validity. Firstly, the interview was not designed to determine educator practice, but rather to provide insight into salient areas of interest to the research topic. It is important to acknowledge that participants' responses do not by themselves provide substantive evidence of the behaviours they would adopt in their daily practice, and additional research is required to substantiate these findings. Use of quantitative methodology (i.e, a survey) would provide an objective and consistent basis for gathering information on key factors identified in this study.

Furthermore, due to the data being collected face-to-face the potential for confirmation bias and anchoring was present. Although steps were taken during the analysis to increase internal validity through inter-rater coding, the potential for skewedness in participant responding in a socially desirable manner was unavoidable using the current methodology. The use of an online survey would remove the social desirability aspects of participants responding in particular ways because you were present.

There were also limitations to external validity, predominantly through the choice of sampling method. The first limitation related to the sampling of the participants, the use of purposive sampling methods meant that the sample was unlikely to be representative. As selection of participants was conducted by others (i.e., school principals) there was potential for skewedness in the sample selection which would impact on the representativeness of the sample group. Additionally, the relatively small sample size further impacted the generalisability of the study. Further investigation with a greater sample size would increase the likelihood of a representative sample and would greatly

improve the ability to determine whether the key findings of Study 1 are representative of QLD educators in general.

Chapter 10:

Methods for Study 2 – School-Based FBA Survey

Study 2 involved the investigation of knowledge and application of FBA processes, within Education Queensland State Primary and High Schools, via administration of an online survey. The purpose of this study was two-fold: first to extend upon the findings on educators' FBA knowledge and practice identified in Study 1 and second, to gain a greater understanding of whether the key findings from that study were in fact representative of Queensland educators. Therefore, the School-Based FBA Survey was developed to investigate (1) educators' knowledge of the key assessment and intervention procedures of FBA, (2) educators' application of FBA procedures, and (3) educators' beliefs or attitudes toward school-based FBA that might act as possible barriers to use of this approach to remediate the challenging behaviour of students with ASD. This chapter describes the structure and content of the School-Based FBA Survey as well as the procedures employed to administer this survey and conduct analyses of the data it yielded.

10.1 Participants

Participants for this study were 94 educators employed by Education Queensland. All key participant features were kept equivalent to those of Study 1 to establish some uniformity between the two samples. The same two inclusion criteria used in study 1 were retained to ensure that participants were selected based on their involvement in the education and/or support of students with ASD (i.e., delivery of curriculum, student assessment, or implementation of educational/behavioural interventions for students with an ASD) or the management of students with an ASD (i.e., providing strategies or support

for other educators, liaising with students' parents, or sitting on special needs committees on behalf of students). The first inclusion criteria required participants to have had recent (i.e., within the last year) contact with students with ASD via their role as educators in a State School. This contact could be either direct (i.e., administration of curriculum, administration of assessments, development of interventions, or implementing interventions) or indirect (i.e., development of policy, allocation/application of resources for students or providing support for other educational staff in the selection or administration of educational adjustments). No restrictions were placed on participant selection based on qualification, levels of experience with students diagnosed with an ASD, or prior teaching experience with students diagnosed with an ASD.

Participants were organised into five sub-groups based on their roles within the school and responsibilities in relation to students with ASD. These five sub-groups were: Mainstream Teachers, Special Education Teachers, Teachers' Aides, Guidance Officers and Policy Makers. This division of participants permitted comparisons between groups to identify whether the differing responsibilities of educators impacted upon their understanding and implementation of FBA and the subsequent development of needs-based intervention plans arising from this form of assessment. The sub-groups were heterogeneous in terms of age, gender, qualifications and experience. A full breakdown of participant features is provided in Section 11.2 (pages 149-150). Participant sub-groups were homogenous as evidenced in table 10.1. However, this was believed to be a more representative sample as it more accurately reflected the distribution of these roles in school populations.

Table 10.1 – Number of participants per educator sub-group

Educator Sub-group	Mainstream Teachers	Teachers' Aides	Special Education Teachers	Guidance Officers	Policy Makers
Number of Participants	31	17	22	8	15

Organisation of participant sub-groups for this from the first study (based on the participants' roles within their school and their responsibilities in relation to students with ASD) were maintained from Study 1. However, the inclusion of an additional sub-group of educators (i.e., Teachers' Aides) was included from the significance of their role in as reported in Study 1.

10.2 Participant Recruitment

Participants were recruited from twenty-one schools located in the South-East region of Education Queensland. Of these 21 schools, 14 were State Primary Schools, 5 were State High Schools and the remaining 2 were Special Education Schools. Special Education Schools were included in this study to examine any differences between the knowledge and application of FBA practices across these settings and their mainstream counterparts and was based on findings that suggest there is a disparity in educator training and expertise based on school type (i.e., special vs. mainstream) (Konza, 2008; Soto-Chodiman, Pooley, Cohen, & Taylor, 2012).

Critical case sampling was deemed appropriate in exploring the expression and application of the expert FBA knowledge possessed by educators with access and experience in teaching/supporting students with ASD. This sampling technique is consistent with Tansey's (2007) guidelines which suggest that non-probability sampling methods are unsuitable in situations where creation of generalisations is not an aim, and the goal is to identify specific events and processes. As an exploratory study with no control group, randomised sampling was not considered viable because many educators have minimal access to students with ASD and, therefore, would be unable to sufficiently contribute data on processes surrounding the assessment and support of these students (Emam & Farrell, 2014). This was crucial as the School-Based FBA Survey aimed to identify specific episodes of decision-making regarding the assessment and subsequent intervention with students through the recreation of clinical events (i.e., through clinical vignettes that may be experienced within an educational setting).

Participants were recruited through a multi-stepped process (described below):

1. A list of schools from within the South-East region of Education Queensland was obtained from the Regional Director of the Department of Education, Training and Employment (DETE). Principals from these schools were contacted via an email and provided with an explanatory statement which contained a description of the study's aims and methods and the parameters for recruiting potential participants.
2. Principals were contacted via telephone call one week after the email was sent, during which further explanation of the study's purpose/aims were given and responses to any queries took place.

3. Principals who expressed an interest in their school becoming involved in the study received a copy of the Explanatory Statement.
4. If Principals agreed to their school participating in the study, written gatekeeper approval was obtained and a subsequent email with instructions on accessing and completing the online survey was provided. This email was then forwarded to the school mailing list via the administration staff of the school.

10.3 Description of the School-Based FBA Survey

All participants were required to complete the School-Based FBA Survey to report on their knowledge and/or usage of FBA in the educational context (see: Appendix G for the School-Based FBA Survey). This survey was constructed to investigate educators' knowledge, beliefs and ability apply FBA concepts to the challenging behaviour of students with an ASD who might attend their school. The School-Based FBA Survey was developed based on the major findings of Study 1 (see: Chapter 8 for the discussion of Study 1 findings). These findings were used as a conceptual framework (Somers, 1994) that assisted in the use of consistent terminology and assessment processes that would be familiar to educators. This framework assisted in the construction of survey items.

The FBA Survey was divided into four sections which aimed to explore the following topic areas: Section A was comprised of nine standard questions relating to participants' biographical details, qualifications, and training in either ASD or FBA, Section B included 10 questions regarding participants' responsibilities and roles within their school in relation to students with ASD, Section C comprised 10 statements about

FBA its applications in schools with participants being required to rate the accuracy of each statement, and Section D presented two separate clinical vignettes based on hypothetical students which presented challenging behaviours often seen in students with an ASD. The four sections of the School-Based FBA Survey are described in detail in Sections 10.3.1-10.3.4 below.

10.3.1 Section A – Biographical and Demographical Information

Basic biographical information was sought on age and gender, as well as demographic information relating to participants' current role within their school, years of educational experience and highest qualification achieved. This information was required to provide accurate descriptions of the sample obtained and to organise responses into the educator sub-groups (identified in section 10.1 page 137).

Survey items also required participants to list and describe any additional training or professional development they had received in relation to students with ASD or implementation of FBA. This information was deemed relevant as key demographic factors provided discussion points for subsequent analyses.

10.3.2 Section B – Educator Responsibilities

This section of the survey was comprised of ten structured questions listing common educator responsibilities towards the care and support of students with an ASD that were identified by participants during study 1. Participants were instructed to respond to each item using fixed responses from a four-point scale in which they identified whether they considered each responsibility a primary, secondary or ancillary responsibility or whether it was not a responsibility of theirs. The responsibilities listed

were representative of those identified by the participants in study 1 through the FBA interview.

This information was included in the survey to create comparison points between levels and types of training, knowledge and application of FBA processes and the educator's responsibilities. This data was considered significant in identifying potential profiles for the different sub-groups of educators for the subsequent development of needs-based training.

10.3.3 Section C – Statements about FBA

This section contained ten statements relating to the implementation and usage of FBA within schools. The construction of these statements was based on Hanley's (2012) research identifying commonly held myths regarding both the implementation and usefulness of FBA procedures in understanding individual student profiles and developing hypothesis-based interventions. Participants were required to respond to the veracity of these statements using a five-point Likert scale, scored to provide ordinal data (Maranall, 2009). This scale consisted of: 1- True; 2 – Somewhat True; 3 – Unsure; 4 – Somewhat Untrue; and 5 –Untrue. A neutral mid-point was included for participants who were unsure whether a statement was true or untrue.

The 10 statements of Section C of the School-Based FBA Survey aimed to identify any potential barriers or obstacles to educators adopting FBA techniques in schools. Researchers (e.g., Hanley et al., 2003; Hanley, 2012) have suggested that professionals who are charged with treating severe problem behaviour but who do not conduct functional analyses can be predisposed to providing multiple reasons as to why they do

not conduct such analyses. Therefore, identification of inaccurate or mistaken beliefs regarding FBA was considered essential for recognising such obstacles.

10.3.4 Section D – Clinical Vignettes

This section included two clinical vignettes which presented two hypothetical students who displayed the types of challenging behaviours often seen in students with ASD. The aim of incorporating these vignettes was to identify educators' processes regarding their case conceptualisation and assessment of the students contained therein. Hanley (2012) describes FBA as *“a process that involves a lot of highly discriminated, professional behaviour”* (p. 55). More precisely, it is a process by which the variables influencing problem behaviour are identified through investigation of key elements of both the individual's behaviour and the contexts in which the behaviour takes place. As per Dunlap, Kern-Dunlap, Clarke and Robbins (1991), the process of clinically applying FBA processes was broken into two distinct but related areas: (1) summarising key clinical information to create an understanding of student difficulty and inform decision-making relating to assessment methods, and (2) applying FBA assessment methods to identify hypothesised setting events, antecedents, and functions in order to understand the contributing factors the difficulties of the hypothetical students presented in the vignettes. The administration of the two vignettes was designed to evaluate educators' application processes of both of these key areas of FBA (i.e., summarising key clinical information and applying FBA assessment methods and analyses) on a separate basis.

The first vignette described a boy with ASD who had recently transferred schools and was displaying emotional and behavioural difficulties in the classroom and the schoolyard. The information on student difficulties provided in this vignette came from a

range of sources (the parent, the student, the student's peers, and other educators) which relayed difficulties with social behaviour in the schoolyard and difficulty communicating these difficulties in the classroom. Participants were instructed to produce a student-focused summary which identified the specific factors that they believed were important to managing the challenging behaviour of the student presented in the vignette.

The second vignette presented an eleven year-old boy with ASD and described a behavioural outburst he experienced in the classroom. The vignette provided information on the events preceding the outburst and described the chain of behaviours that the student used to cope with the environmental demand he was experiencing. This vignette depicted an escalation of events which culminated in the expression of an outburst (throwing chairs in the classroom and threatening his classroom teacher) which implied that the student's behaviour was maintained by escaping a difficult classroom situation and that the student's behaviour would be reinforced if he was either ignored or differentially reinforced whilst engaging in the outburst. Participants were also provided with forced-choice questions to further assess their understanding the relationship of the student's behaviour and environmental factors which exacerbated it.

Following presentation of the vignette, participants were required to identify key factors that would be useful in conducting FBA. Responses to this vignette were presented in two sections.

Section 1 presented seven open questions prompting participants to identify: (1) specific factors which affected and possibly contributed to the student's behaviour (i.e., setting events, antecedents and consequences), (2) any assessment or intervention targets they would implement, (3) methods for evaluating the student's behaviour, and (4) any

processes they would use to evaluate if their suggested interventions were effective in addressing the student's behaviour. These questions were constructed to reflect the sequential process of applying FBA methods to the vignette.

Section 2 presented eight closed items with multiple, fixed response options provided. The seven questions from Section 1 were retained and an additional item distinguishing intervention options from intervention targets was included. Past studies (e.g., Mortenson, Rush, Webster & Beck, 2008) have shown that a forced-choice question approach yields more accurate responses from educators. Therefore, the inclusion of the multiple choice questions provided an opportunity to triangulate participants' responses in relation to the application of FBA processes to this vignette through the comparison of forced-choice questions to open question responses.

10.4 Procedure for Administration of School-Based FBA Survey

Prior to administering the survey, ethical clearance to undertake research was obtained from both the Bond Human Research Ethics Committee and Education Queensland. The School-Based FBA Survey was presented and administered to all participants as a online survey as the instrument physically resided on a web-based server (Jansen, Corley & Jansen, 2007). The use of a web-based survey was implemented because, unlike traditional mail surveys, online surveys tend to yield a large amount of qualitative data obtained from open-ended questions (Matsuo, McIntyre, Tomazic, Katz & Matsuo, 2004). This was considered relevant in regard to the completion of the clinical vignettes which required participants to respond openly to the student cases and provide

information on FBA process and application. Although qualitative data obtained through surveys cannot provide in-depth information (unlike data obtained through qualitative face-to-face interviews), an online survey surpasses a paper survey in terms of collecting rich data from open-ended questions (Matsuo et al., 2004).

While self-selection is often raised as a concern when seeking to collect representative samples via internet-based surveys, largely due to participants who elect to respond being especially motivated or interested in the research topic, McIntyre, Tomazic, Katz, and Matsuo (2004) contend that self-selection is not more problematic in internet surveys than mail and telephone surveys. More attention should be given to multiple responses and non-serious responses, which result from the inherent ease of completing online surveys and the lack of control over who responds to them. Similarly, it is possible for individuals to affect the quality of the results by deceptively or falsely answering questionnaire items (Nosek et al., 2002) or by simply submitting their response multiple times. Consequently, the survey settings were IP-restricted to prevent multiple responding and to ensure that participants could return to incomplete surveys and complete them a later time. Furthermore, a threshold was set so that incomplete surveys that failed to respond to a minimum of 50% of the available items were not included in the final data sets.

10.5 Analysis of Survey Data

As an exploratory study, no hypotheses were tested. Rather, the results were presented in relation to their significance in understanding the impact of FBA training on educator practice. As such, five points were addressed in relation to the translation of FBA into school settings which were derived from criticisms levelled towards FBA outlined in Section 5.2 (pages 49-60) and the results of Study 1 outlined in Chapter 8. These five points were as follows: (1) educators are unlikely to receive training in either understanding ASD related difficulty or in understanding and practicing FBA, (2) receiving FBA training is dependent upon educator role and responsibility, (3) a relative lack of training impacts the implementation of FBA frameworks within schools, (4) educators have beliefs about FBA that are not consistent with findings in the FBA literature, and (5) that there are gaps in the application of FBA for students with ASD. These five points were derived from criticisms levelled towards FBA outlined in chapter 5.2 in this thesis.

Because all data collected from the survey were categorical, a coding frame was developed to collate and organise participant responses (see: Appendix H for the coding frame for School-Based FBA Survey). Once collected, data were entered into SPSS (v22) for analysis.

10.5.1 Analysis of Demographic Information and Educator Training

Section A of the School-Based FBA Survey contained nominal data that were coded and organised into frequency tables. Chi-squared tests of independence were

applied to data sets on educator training to ascertain differences between educator sub-groups. Chi-squared tests are considered an appropriate measure to test for independence in exploratory and descriptive research as they can explore the nature of relationships between data sets without needing to define these relationships (Gravetter & Forzano, 2012). This was important given the expected heterogeneity of the sample and the consequent decreased likelihood for obtaining a normal distribution.

10.5.2 Analysis of Educator Roles, Responsibilities and Attitudes towards FBA

Data from sections B and C of the School-Based FBA Survey were collected using ordinal measurement scales. All coded data were placed in frequency tables for initial analysis of the distribution of each variable. Contingency tables were created to examine joint frequency distribution and non-parametric, statistical measures were conducted in the form of chi-squared tests for testing the significance of associations between categories.

10.5.3 Analysis of the Clinical Vignettes

The analysis of the clinical vignettes contained in Section D of the School-Based FBA Survey used a different methodology from the previous sections as participants were required to respond to open questions. Qualitative data in the form of participant responses to the two clinical vignettes were reduced to quantitative data by a process of pre-coding the possible range of participants' responses and then cross-checking participant answers for matching with these pre-codes.

The intent of Vignette 1 was to measure educators' ability to identify critical targets for investigation which would assist in understanding the student's challenging behaviour. Participants were prompted to present a student-focused summary of the vignette which contained three components: problem behaviour(s), associated factor(s), and options for working with the student. A list of acceptable responses for each of 'problem behaviours', 'associated factors', and 'options for working with the student' was created. Participant responses were coded as either being correct or incorrect if they could identify and correctly classify one factor from each list resulting in a total possible score of 1 for each category.

The intent of Vignette 2 was to measure educators' knowledge of FBA by answering a series of questions requiring the identification of specific factors relating to FBA processes. This was accomplished through the use of both open responses and forced-choice questions. The open ended questions required participants to identify specific factors within an FBA framework and were coded as either correct or incorrect. Responses were coded as accurate if they provided a response which identified factors that were pre-coded. Educator responses were coded as inaccurate if they provided a response that either did not identify the correct factor or provided a response that was unclear in specifying one factor over another. Additional forced-choice questions served to assess whether the educators' performance would be enhanced when selecting an answer rather than producing a spontaneous answer. For the forced choice questions, accuracy was determined by which answer the educator selected.

To ensure accuracy of results, 23% of the coded responses for the vignettes were submitted to inter-coder reliability checks. Percentage agreement as per McHugh (2012) was set at a threshold of 90%. Inter-rater reliability measures were used as a reflexive

process, whereby instances of disagreement were reviewed and, where necessary, changes were made to the coding frame. Following this process, final agreement of 95.2% was reached.

Chapter 11:

Study 2 – School-Based FBA Survey Results

This chapter describes the results gained through administration of the School-Based FBA Survey to the 94 participants involved in the education or management of students with ASD. The present study examined South-East Queensland state school educators' knowledge and perceptions of the FBA process. Educators were invited to participate in the study if they: 1) were certified and working in a state school from the South East Queensland district, and 2) had contact during the previous school year with at least one student diagnosed with an ASD due to their professional role. Participants were asked to partake in an anonymous web-based questionnaire through the website SurveyMonkey.

11.1 Exploration of Participant Responding

A total of 107 participants accessed the web-based survey via the link sent to their school-based e-mail; however, only 94 participants attempted to complete the survey. Of the 94 educators who attended to survey, 78% (73) provided complete responses to all items of the School-Based FBA Survey. Of the 22% that provided incomplete responses: 4% (4) completed only parts A and B of the survey, 15% (14) completed parts A, B and C of the survey but did not attempt part D, and 3% (3) completed the majority of the survey but left some items in section D incomplete.

As the majority of the analysis was descriptive in accordance with the exploratory nature of the study, no imputation was deemed necessary. The presence of incomplete

data sets was considered to be representative of the difficulty associated with applied tasks within the survey, and, therefore, has been included in all subsequent analyses.

11.2 Participant Demographics

The educators within the sample were predominantly female (75.5%), and the sample had a mean age of 39.98 years (range of 44 years; standard deviation of 8.78 years). All participants had received at least one tertiary degree, with 43.6% having a Bachelor's degree and 21.3% possessing a graduate degree in education. A considerable number had completed postgraduate degrees, with 18.1% having completed a postgraduate qualification such as a Master's degree and one educator having completed a PhD related to special education. See Table 11.1 for further information about the sample's characteristics.

Table 11.1 – Descriptive Characteristics of Educators in the Sample

Characteristics	N
Gender	
Male	23
Female	71
Educational Background	
No Tertiary Qualification	1
Diploma or Certificate	14
Bachelor's Degree	41
Graduate Degree	20
Postgraduate Degree (other than a doctorate)	17
Doctoral Degree	1
Teaching Area	
Primary School	61
Secondary School	25
Special Education School	8

In regard to the level of teaching at which educators were currently employed, 64.9% worked at the primary level, 26.6% at the high school level, and a further 8.5% worked within dedicated special education schools.

Within the area of teaching experience, 30.9% of teachers had been teaching for 1-5 years, 25.5% had been teaching for between 5-10 years, a further 29.8% had been teaching for 10-20 years, and 13.8% had over 20 years of experience. See Table 11.2 for descriptive information concerning Teaching Experience

Table 11.2 – Years of Experience of Teachers Included in the Sample

Years of Experience	N
1-5 years	29
5-10 years	24
10-20 years	28
20+ years	13

11.3 Likelihood of Educators Having Received ASD or FBA-based training

Part A of the School-Based FBA Survey required participants to identify whether they had undertaken any training or professional development: (1) specific to the management of students with ASD or, (2) specific to the application of FBA. Participants were also required to provide details and descriptions of any training or professional development they had undertaken.

Despite currently working with students with ASD, the majority of participants had received no training or professional development in relation to understanding ASD difficulty, as shown in Figure 11.1. Of the 39.4 % who did receive training, they were

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

more likely to have received in-service training (12.8%) or to have undertaken self-directed professional development (8.5%), with a smaller percentage having attended seminars and conferences (5.4%), short courses (5.3%), or a combination of methods (4.3%). Educators were unlikely to have engaged in higher education degrees which focused on ASD training (3.1%) (See: Appendix I for full breakdown of types of ASD training).

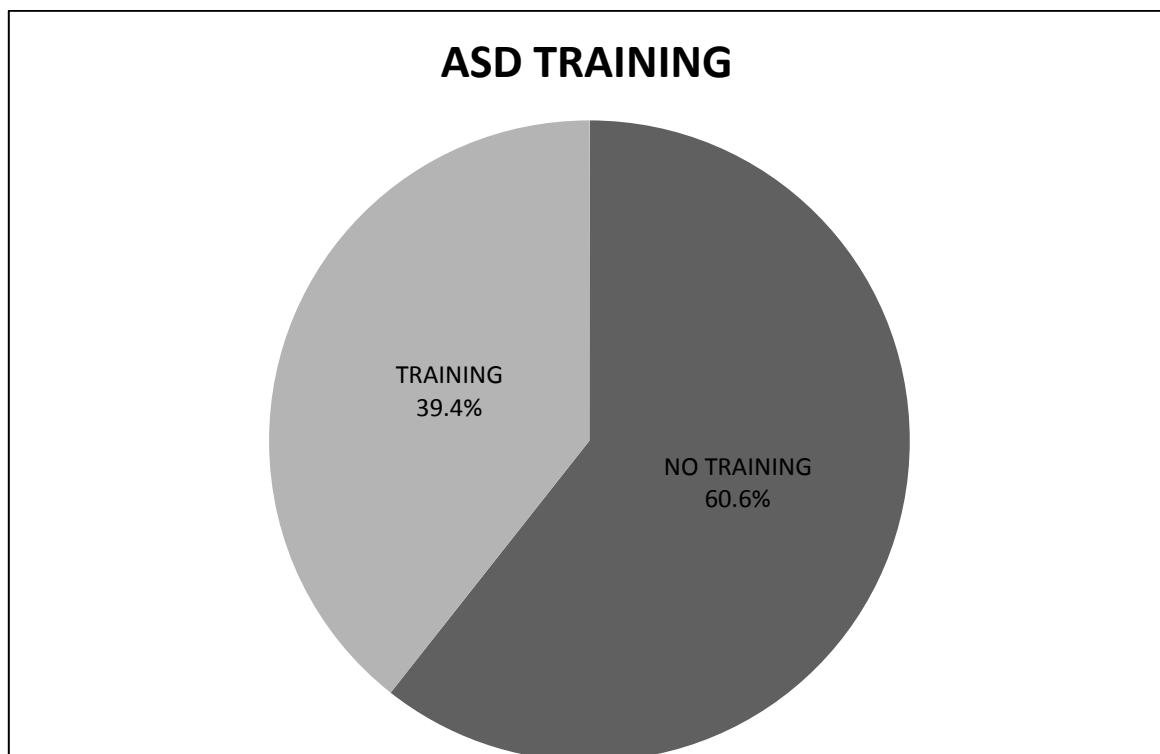


Figure 11.1 Types of ASD Training Received by Educators

An even larger percentage of participants had received no training or professional development in relation to FBA as shown below in Figure 11.2 below. When training sources relating to types of FBA training was investigated, the only variable that was significant was having undertaken a higher education degree, with 12.7% of the 20.2% of educators who did receive FBA training having done so through a post-graduate university degree. Of the remaining training methods, no method appeared more common than any others (See: Appendix J for full breakdown of types of FBA training).



Figure 11.2 Types of FBA Training Received by Educators

11.4 Receiving FBA Training is Dependent upon Educator Role and Responsibility

Further investigation of educator training determined that receiving training or professional development was closely associated with educator roles. Chi-square tests for independence were conducted to investigate the relationships between educator position and training in both FBA and ASD based on the calculation of frequencies for each subgroup of educators. Significant differences were found between educator position and ASD training ($\chi^2 (4, N=94) = 12.74, p = .013$, Cramér's $V = .368$), and also between educator position and FBA training ($\chi^2 (4, N=94) = 14.37, p = .006$, Cramér's $V = .393$). Consistent with the results of Study 1, those in support roles (i.e., Policy Makers and Guidance Officers) were more likely to have received training than those working directly

in classrooms. A further Chi-square test for independence (with Yates Continuity Correction) was conducted between FBA training and ASD training which also indicated a significant difference ($\chi^2 (1, N=94) = 45.33$ $p < .001$, $\phi = .72$). It was more likely that educators had received training in both ASD and FBA than in either ASD or FBA.

The experience of FBA-based training was also closely associated with the tasks educators identified they were responsible for in the behavioural assessment and intervention of students with ASD. Part B of the School-Based FBA Survey presented ten common responsibilities in which educators might engage while teaching and supporting students with ASD. Participant responses to these tasks allowed for the investigation of profiles of educator responsibilities. Analysis of educator responses to these items indicated that while some responsibilities, such as communicating with others (i.e., other educators or the students' parents) and providing support and case managing a student with ASD, were not affected by the presence of FBA training, several differences were identified in the duties performed by those with training. With the exception of conducting standardised testing, which was strongly associated with Guidance Officers only, educators who had received FBA training were responsible for more duties regarding students with ASD than the other educator sub-groups (see Figure 11.3).

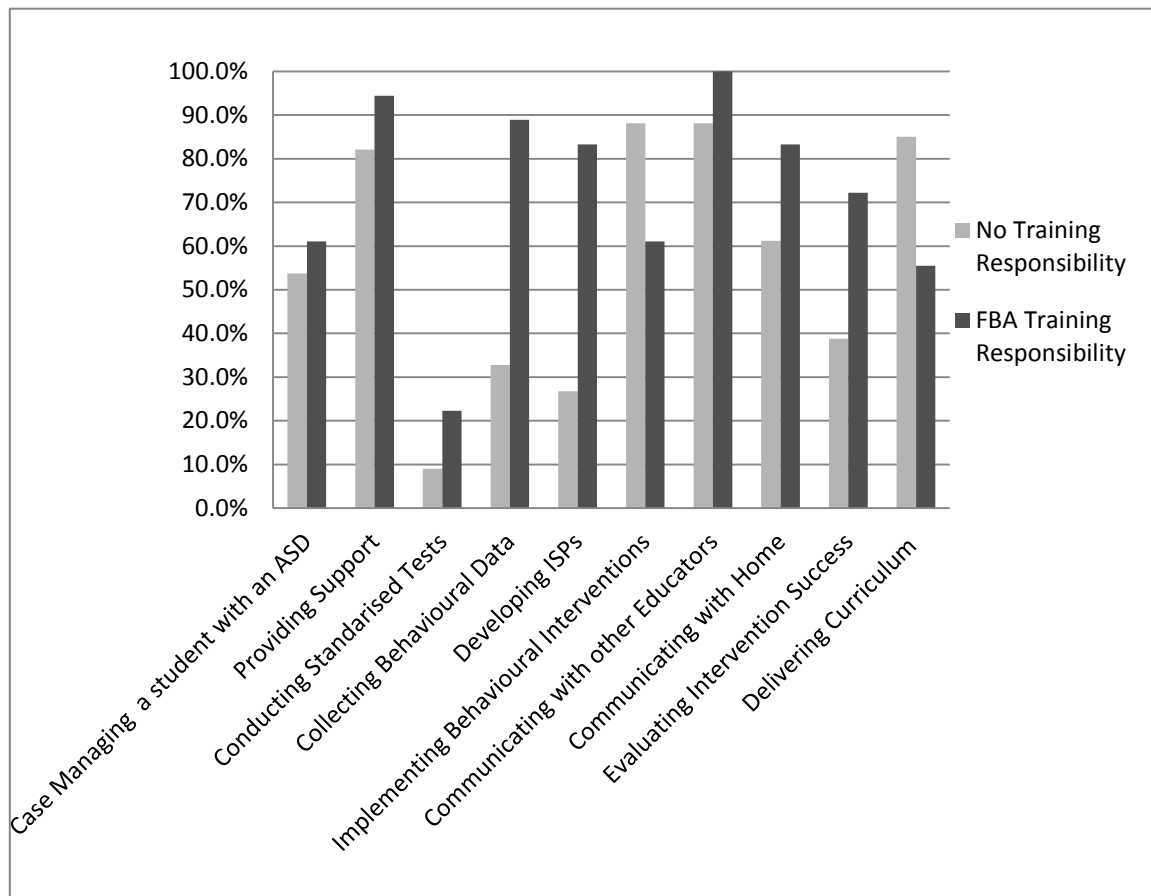


Figure 11.3 – Comparison of Educator Responsibilities towards ASD students Based on Receiving FBA Training

Those participants who had received FBA training were more likely to be responsible for collecting behavioural data on these students ($\chi^2 (3, N=91) = 15.837, p < .06$, Cramér's $V = .461$), developing individual student plans for these students ($\chi^2 (3, N=91) = 16.745, p < .06$, Cramér's $V = .473$), evaluating success of behavioural interventions ($\chi^2 (3, N=91) = 5.106, p < .17$, Cramér's $V = .274$), and communicating about ASD students to other educators ($\chi^2 (3, N=93) = 2.704, p < .17$, Cramér's $V = .289$).

In contrast, those who had not received FBA training were more likely to be responsible for implementing behavioural interventions with students ($\chi^2 (3, N=91) =$

5.357, $p < .17$, Cramér's $V = .289$), and delivering curriculum ($\chi^2 (3, N=91) = 5.357, p < .17$, Cramér's $V = .289$).

11.5 Components of FBA Frameworks are Being Implemented within Schools

Despite educators indicating a lack of training in regards to FBA, there was evidence that FBA frameworks were being utilised within the educators' schools. Part B of the School-Based FBA Survey presented ten common responsibilities which were identified by educators as of importance in Study 1 (see: Chapter 8 for the results of Study 1). These items were then used to evaluate which tasks educators felt they were responsible for in the management and support of students with ASD. Four of the ten responsibilities related directly to essential components of FBA frameworks (i.e., collecting behavioural data, developing behavioural support plans, implementing behavioural strategies, and evaluating behavioural strategies). Participant responses to these items demonstrated that many components of FBA were implemented. However, as Figure 11.4 demonstrates, not all components of FBA were implemented evenly amongst the educator sample.

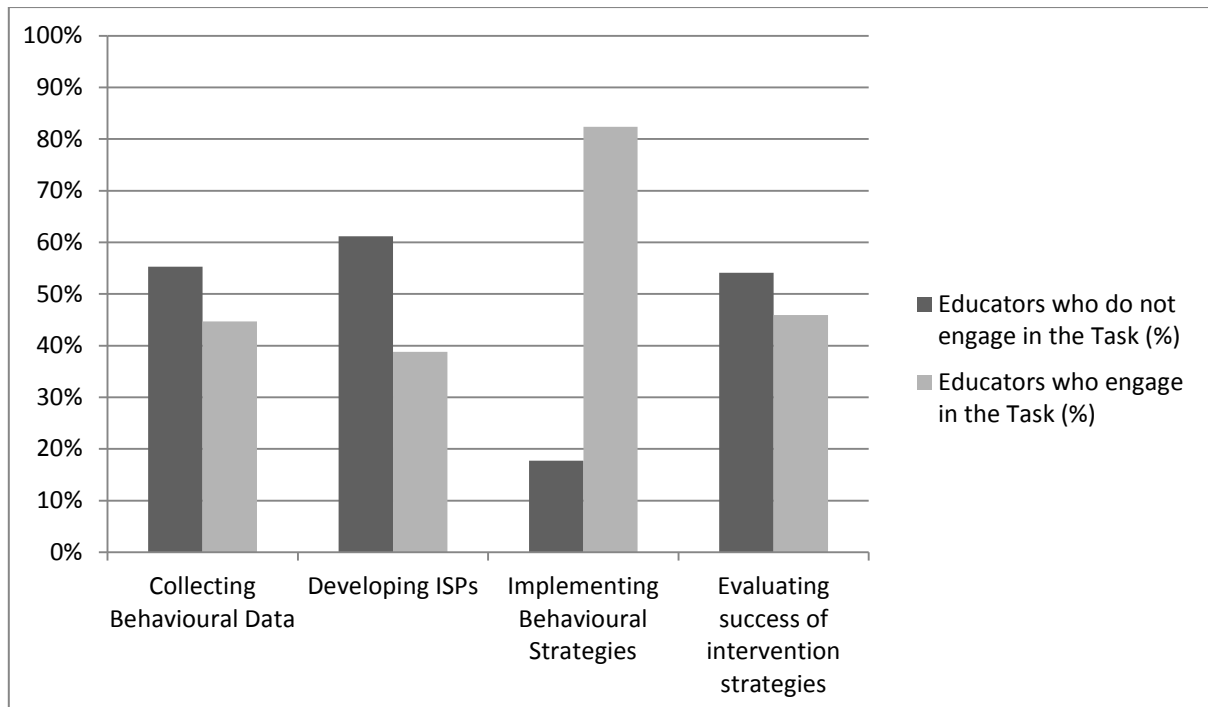


Figure 11.4 – Breakdown of Educator Responsibilities in Relation to FBA-related tasks

While 82.5% of the educators indicated that they were responsible for enacting behavioural interventions, significantly lower percentages indicated that they were responsible for collecting behavioural data (44.7%), developing individual student plans (38.8%) or evaluating the success of behavioural intervention strategies (45.9%). These figures were relevant as a substantial divergence occurred between the 20.2% who had been trained in FBA techniques (see section 11.1) and the much higher proportions of educators who were performing those techniques.

11.6 Educators have Beliefs about FBA that are Not Consistent with Findings in the FBA Literature

In part C of the School-Based FBA Survey, participants were provided with a series of ten statements about FBA within schools and were required to give their own

opinion about the validity of those statements. Educator responses to these statements were cross-referenced with current FBA-literature to determine whether common strengths and/or myths were upheld by the sample group. See table 11.4 for detailed descriptions of participant responses to the FBA statements.

Table 11.3 – Number of Educator Responses to Statements about FBA

Statement	Untrue	Unsure	True
FBA is too time consuming	10	21	59
FBA is complicated	10	23	57
FBA needs manuals	28	39	23
FBA helps understand classroom behaviour	43	21	26
FBA is used regularly	60	13	17
FBA requires training	8	16	66
FBA is flexible	9	45	36
FBA leads to individualised intervention	13	28	49
FBA should be conducted by external professionals	30	28	32

Three items were included which corresponded with commonly-held strengths of FBA: (1) that it leads to greater understanding of classroom-based behaviour, (2) that it leads to individualised intervention, and (3) that its implementation is flexible. The majority of educators agreed that there were benefits to using FBA with their students, with greater than half of educators indicating they believed that using FBA led to individualised education and almost half (47.4%) suggesting that FBA helped to understand classroom behaviour. However, despite FBA being espoused by researchers

as being a flexible and adaptive assessment process, less than half (40.5%) of educators indicated that they believed this to be true.

Two items were included which corresponded with commonly-held erroneous criticisms of FBA: (1) that it is too time-consuming for use in schools, and (2) that it is too complicated. Both of these criticisms were upheld by the educators, with almost two-thirds of educators indicating that they believed FBA was too time-consuming (65.2%) and a further 62.9% believed that FBA was too complicated a methodology to be used in schools.

The final four items related to the implementation of FBA within schools: (1) FBA is used regularly in schools, (2) FBA requires training, (3) FBA requires manuals, and (4) FBA should be conducted by external professionals. Almost three quarters of educators (73.8%) indicated that they believed the implementation of FBA requires prior training before being able to use it effectively within schools. This was contrary to the previous results which suggested that FBA was being implemented within the educators' schools despite a lack of training.

These ten statements were also used to identify whether differences existed in educator beliefs and attitudes towards FBA on the basis of having received FBA training. Analysis of educator responses indicated that, of the ten statements, significant differences occurred between those who had received FBA training compared to non-trained educators on five of the ten items (as demonstrated in figure 11.4 below).

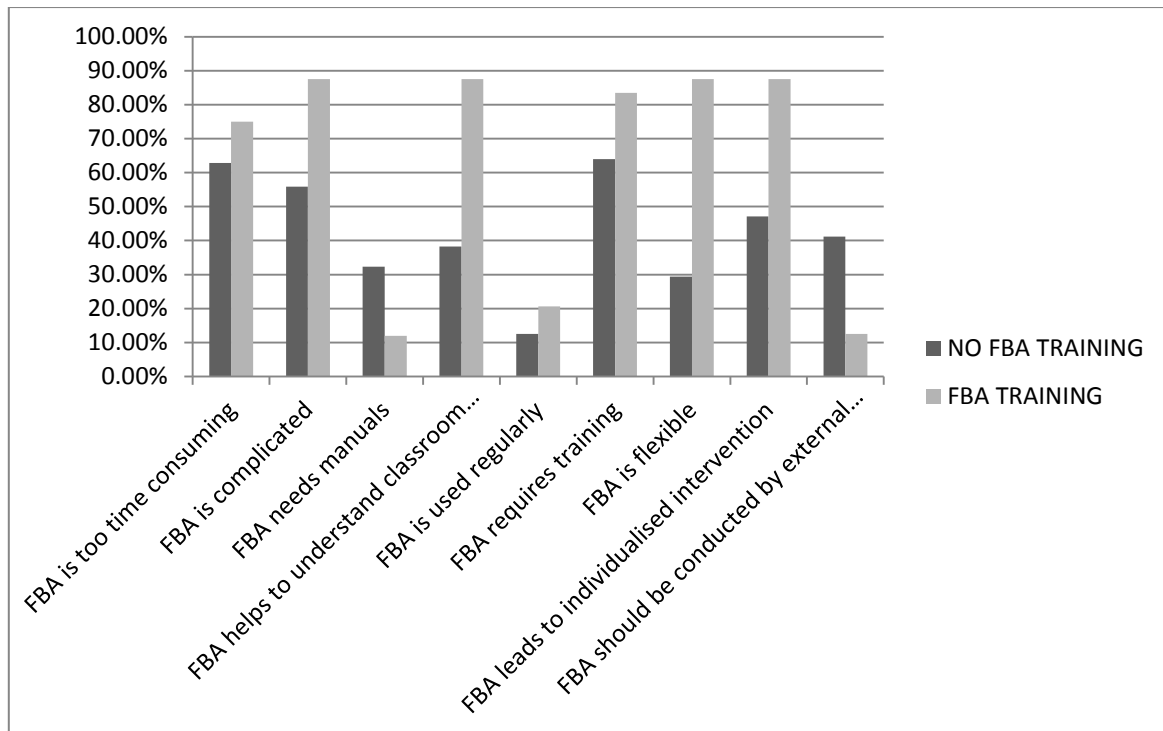


Figure 11.5 – Comparison of FBA-related Beliefs Based on Receiving FBA Training

Those who had received FBA were significantly more likely to believe that FBA: helps understand classroom behaviour ($\chi^2 (2, N=87) = 5.530, p < .07$, Cramér's $V = .367$), was a flexible assessment methodology ($\chi^2 (2, N=87) = 7.772, p < .07$, Cramér's $V = .435$), and led to individualised intervention ($\chi^2 (2, N=87) = 3.012, p < .29$, Cramér's $V = .202$). Conversely, those who had received no FBA training were more likely to believe that FBA is a manualised procedure ($\chi^2 (2, N=87) = 6.803, p < .07$, Cramér's $V = .407$), and that FBA should be conducted by professionals not directly employed by the school ($\chi^2 (2, N=87) = 5.231, p < .16$, Cramér's $V = .357$).

11.7 Gaps in the Application of FBA for Students with ASD

Predictably, given the lack of specific FBA-based training, educators demonstrated significant knowledge gaps in their application of FBA frameworks. This was evident

through responses to the two clinically-based vignettes presented to the educators which required the application of distinct FBA constructs. Each vignette was designed to activate specific knowledge and technical skill to ascertain whether the educators surveyed could adequately identify and classify the relevant information. There was evidence of a lack of knowledge and technical application ability of FBA frameworks from educators across both vignettes in relation to (1) the identification of significant information prior to the implementation of an FBA process, and also (2) with the application of specific FBA concepts. These two results will be discussed below.

11.7.1 Identification of Significant Factors Prior to Implementing FBA

Vignette 1 presented a long case study describing a student with ASD who was experiencing a range of difficult emotional and behavioural disturbances in the school setting (See: Appendix F Part D for Clinical Vignette 1 in the FBA-Survey). Educators were then required to identify the specific problem behaviours and associated factors for this student as well as suggest potential intervention options based on the factors they had selected. Overall, educators demonstrated some difficulty in the classification of factors within the FBA framework, with only 25% of educators correctly identifying the problem behaviours within the vignette, 38.8% identifying the associated factors, and 36.3% identifying appropriate behaviour management options.

Educators who had received no training in FBA or ASD demonstrated the most difficulty in identifying these factors; they correctly identified problem behaviours only 6.7% of the time and correctly identified associated factors 15.6% of the time. As a result, the suggested behavioural intervention options they selected were appropriate to the

expressed student difficulties only 17.8% of the time. See Table 11.3 for identification of salient student factors by training types.

Table 11.4 – Application of Student-based Summary via Training Types

	No Training (n=45)		ASD Training (n=17)		FBA Training (n=18)	
	Not Identified	Identified	Not Identified	Identified	Not Identified	Identified
Problem Behaviours	93.3%	6.7%	64.7%	35.3%	33.3%	66.7%
Associated Factors	84.4%	15.6%	29.4%	70.6%	38.9%	61.1%
Intervention Options	82.2%	17.8%	58.8%	41.2%	27.8%	72.8%

Educators with ASD training performed better than those without training in correctly identifying associated factors 70.6% of the time, yet they demonstrated difficulty in identifying the specific problem behaviours that the student was experiencing, as they only correctly identified the problem behaviour 35.3% of the time. They fared better in correctly identifying appropriate intervention options (41.2% of the time).

Educators who had received FBA training performed better than the ASD-training or the no-training groups in correctly identifying the student's problem behaviours (correctly identified 66.7% of the time), and appropriate intervention options (correctly identified 72.77% of the time). However, while difficulty with identifying and classifying meaningful behavioural factors was more evident in those without any training, it was still present in those who had received FBA training. Those with FBA training displayed errors in classification: of the 33.34% of the educators who did not correctly identify problem behaviours, 22.7% incorrectly classified associated factors as problem behaviour. These instances were still considered incorrect responses because they had not been classified appropriately within the FBA framework.

11.7.2 Application of FBA Concepts

Further gaps were identified in the application of Vignette 2 in which educators were required to specifically implement an FBA procedure to analyse one incident in which a student with ASD had experienced a behavioural outburst within a classroom setting. The vignette described the incident and provided information on the events preceding the outburst and the chain of challenging behaviours that the student used to cope with the environmental demand he was experiencing (see: Appendix F Part D for Clinical Vignette 2). Participants were required to identify specific information within the vignette and apply it to an FBA framework by correctly categorising: (1) the problem behaviour, (2) significant events preceding the outburst (i.e., proximal and distal antecedents), and (3) specific consequences of the outburst which would lead to the formulation of a functional hypothesis. Educators were then required to specify: (4) the assessments they would administer to investigate the student's behaviour, (5) potential behavioural strategies they would implement, (6) evaluation processes they would use, and (7) how they would respond if their behavioural strategies were not effective in modifying the student's behaviour. Responses to this vignette were presented in two sections, first with open questions and then with closed questions using multiple choice options as additional prompts.

Overall, participants experienced difficulty in identifying key events in the application of FBA in a classroom setting. On average, participants were able to answer 32.58% of the questions correctly before prompts were delivered. Following the delivery of prompts, there was an increase to 38.7% in correct responding. However, for the

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

educators who had received FBA training, the presentation of additional prompts had a greater positive effect on accurately responding to the FBA-related questions. See table 11.6 for the percentages of correct responses to Vignette 2 before and after prompting based upon having received FBA training.

Table 11.5 – Comparison of the Application of FBA Components with and without Training

	Without FBA Training		With FBA Training	
	% Correct Prior to Prompting	% Correct Following Prompts	% Correct Prior to Prompting	% Correct Following Prompts
Setting Events	5.5%	15.1%	16.7%	33.3%
Antecedents	27.3%	28.3%	55.6%	61.1%
Function Label	20.0%	35.9%	32.0%	61.1%
Assessment Target	2.5%	18.9%	54.9%	50.0%
Assessment Strategy	2.5%	18.9%	22.2%	66.7%
Behavioural Strategy	25.5%	22.6%	50.0%	50.0%
Evaluation of Interventions	14.6%	11.3%	38.9%	61.1%
Remediation after unsuccessful intervention	32.7%	30.2%	40.0%	61.1%

Educators who had received no FBA training demonstrated significant difficulty in identifying changes in the environment which precipitated the student's challenging behaviour. These educators correctly identified setting events 13.7% of the time and antecedents 26.68% of the time before receiving prompts. Following the delivery of additional prompts, the identification of antecedents increased to 39.7%. However, a small decrease occurred in the identification of setting events, from 13.7% down to 10.5% of the

time. These educators also correctly identified the function of the behaviour 34.3% of the time before prompts, with an increase to 39.73% following prompting.

This group of educators also had difficulty in identifying specific data-collection methodologies. They correctly identified assessment strategies 2.5% and evaluation strategies 14.6% of the time respectively before receiving prompts. Following the delivery of additional prompts the identification of assessment strategies increased to 13.2%. However, a small decrease occurred in the identification of evaluation strategies from 13.2% to 11.3% of the time. The addition of prompts also assisted these educators in identifying appropriate assessment targets, with the proportion of educators doing this increasing from 2.5% to 18.87% following the delivery of prompts.

As expected, educators who had received FBA training performed better than those without that training on every item. What was of interest about this former group of educators was that they demonstrated a greater increase in performance on almost every item following the presentation of prompts. This was evidenced in the identification of important factors precipitating the student's challenging behaviour with correct identification of setting events moving from 16.7% prior to prompting to 33.3% following prompts. Performance in the identification of consequent significant factors also increased. Prior to being given prompts these educators correctly identified the function of behaviour 31.9% of the time; following the delivery of additional prompts, this number increased to 61.1%. Furthermore, while no educators identified valued outcomes associated with the function prior to prompting, following the delivery of prompts this number increased to 19.7%. The largest increases in performance for these educators occurred in the selection of data-collection methodologies. Participants correctly identified

appropriate assessment strategies 22.2% of the time and evaluation strategies 38.9% of the time before receiving prompts. Following the delivery of additional prompts, these numbers increased to 66.7% for the identification of assessment strategies and 61.1% for the selection of evaluation strategies. However, the identification of these factors did not appear to have any impact on the selection of behavioural strategies, with exactly half of the educators identifying suitable behavioural strategies both before and after prompting.

While there was a demonstrated improvement shown in these educators following FBA prompts, it should be noted that, prior to the administration of closed questions, their performance in correctly applying an FBA process to Vignette 2 was still considerably low. The common errors made in relation to the conceptualisation of the vignette were in the identification of function and environmental demand. Of the educators who incorrectly identified antecedents, 43.9% attributed the hypothetical student's difficulty to a general dislike of school despite there being no mention of such difficulty. A further 35.1% attributed the student's difficulty to a disruption in routine, rather than evaluating the task difficulty that was occurring in the immediate environment. Of the educators who incorrectly identified function, 51.2% of them misattributed the function of challenging behaviour as trying to obtain teacher attention rather than escape.

Chapter 12:

Study 2 – School-Based FBA Survey Discussion

Behavioural researchers (e.g., Asmus, Vollmer, & Borrero, 2002; Crone & Horner, 2000; Vollmer & Northrup, 1996) have consistently recommended the use of FBA in schools to develop an understanding of the challenging behaviour exhibited by students with ASD prior to the planning, creation, and application of behavioural interventions. The foundation for including FBA in schools is based on the premise that examining: (1) the factors associated with situational demand via-systematic assessment (2) the expression of challenging behaviour in response to situational demand, and (3) the ways in which challenging behaviour assists the student to cope with situational demand forms a robust basis for development of individualised intervention strategies (Matson & Minshawi, 2006; Bitsika, 2008). This is particularly relevant in schools, given the increasing evidence suggesting that academic problems and challenging behaviour are inter-connected (Filter & Horner, 2009; Hanley, 2012).

The increase in the number of students with ASD in mainstream schools has resulted in a corresponding demand for educators to be proficient in behavioural assessment and modification techniques to address the likelihood of classroom-based challenging behaviour. However, despite the existence of a strong research base spanning many decades that demonstrates the effectiveness of FBA processes and techniques, there has been difficulty in implementing FBA in schools (e.g., Allday, Nelson & Russel, 2011; Blood & Neal, 2007). The issue of educator knowledge of FBA processes has gained attention from researchers as a contributing factor to effective translation of FBA into schools (Bloom, Iwata, Fritz, Roscoe & Curreau, 2011). The majority of school-based

FBA research emerges from American systems, in which FBA is a federally mandated process for students with disabilities (Couvillon, Bullock & Gable, 2009; Scott et al., 2005; O'Neill & Stephenson, 2010). As such, the demand for qualifications and competence in this field is higher in the US than is currently present in Australia (O'Neill & Stephenson, 2010). Nonetheless, given the demands currently placed upon Australian educators to effectively address challenging behaviour, and the research support for FBA as an effective assessment methodology for use with students with ASD, it may be suggested that FBA training of educators could lead to direct benefits to schools.

Study 2 aimed to investigate Australian educators' knowledge and perceptions regarding the FBA process through three distinct goals. The first goal was to determine the types and extent of any FBA training that the surveyed educators had received. The second goal was to evaluate educators' knowledge relating to the implementation of school-based FBA and to determine any knowledge gaps that existed in educator's application of FBA processes. The final goal was to identify any attitudes towards, or beliefs about, FBA that were contrary to the established research base.

12.1 Summary of Educator Training

The results of the present study demonstrated that only 20.2% of the 94 educators surveyed reported having received any type of training in FBA, while a greater number (39.4%) had received ASD-based training. As with Study 1 of this thesis, educator role had a significant effect on whether participants had received training and professional development, with those in support roles far more likely to have received additional professional development.

12.2 Educator Knowledge of FBA Processes

Prior investigations of the ability of persons unfamiliar with the theoretical principles of FBA to conduct such assessments (Iwata et al., 2000; Moore et al., 2002; Wallace et al., 2004) have demonstrated that, following the presentation of concrete frameworks, FBA concepts can be adopted and applied in a valid manner. Study 2 tested that assertion by measuring teachers' ability to identify specific factors within an FBA process by providing both open items and forced-choice items with additional prompts to assist with the application of FBA concepts. The finding of this second study indicate that, while prompting resulted in minimal improvements in those educators who were unfamiliar with these theoretical principles, those who benefited the most were educators who were already familiar with FBA principles.

The findings regarding educators' knowledge of FBA processes indicated a low level of knowledge in the application of FBA in a classroom setting. On average, participants were able to answer less than a third of questions about applied matters correctly although, after receiving prompting in the form of closed questions, this number increased to 44.3%. These rates were lower than those reported in similar studies such as Mortenson et al., (2008) and Myers and Holland (2000). In previous studies (e.g., Tobin & Crone, 2003; Myers and Holland, 2000), educator knowledge of FBA was determined predominantly by the identification of the function of behaviour. Correct identification of function in that study occurred between 40-60% of the time, which those authors concluded demonstrated a moderate to low knowledge base. Mortenson et al (2008) investigated knowledge of FBA in early career teachers using a similar format to the current study, with the presentation of both open and closed questions. They found an average percentage of correct responses for participants of 64% when educators were

presented with forced-choice questions. In this study, when given additional direction, in the form of forced-choice prompts, educators who had previously received FBA training experienced an increase in correct responses closer to what was found in the Mortenson (2008) study. Comparing the results from the current with those obtained from Mortenson (2008) similarities were found but only for those educators who had received prior FBA training. These FBA-trained educators correctly identified the function of behaviour 61.1% of the time following additional prompting. While the educators who had received no training experienced some increase in correct responding, a correct response rate of 35.9% was well below the results found in Mortenson et al.'s (2008) study.

However, in order to complete a technically-adequate FBA, "*a foundation of knowledge is required beyond that of the identification of behavioural function*" (Hesney, 2011 p. 65) and none of these previously mentioned studies undertook more comprehensive evaluations of FBA knowledge that included the identification of precursor factors (i.e., setting events and antecedent) nor did they assess the use of identified factors in decision-making on potential assessment or intervention options. The current study identified that educators possessed low knowledge of the impact of factors preceding challenging behaviour. In particular, the majority of educators were unsuccessful in identifying the distal or setting events that contributed to the demand placed upon the hypothetical student presented in Vignette 2. This is particularly relevant in regards to addressing the behaviour of students with ASD because the management of environments to prevent the escalation of challenging behaviour is considered a particularly effective behavioural strategy (Repp & Horner, 1999; Hanley, Iwata & McCord, 2003)

12.3 Identification of Behavioural Targets

Study 2 also revealed a significant finding in relation to the identification of behavioural targets for assessment, in which educators demonstrated noteworthy difficulties in either identifying or correctly classifying salient behavioural events. While it was not expected that the majority of educators would possess proficiency in FBA because of their lack of training, given the experience of the sample group and their collective exposure to students with ASD, it was anticipated that they would be able to identify specific students' behavioural issues. The difficulty these educators experienced is consistent with findings reported by Bitska (2008), who discovered that school-based staff experienced problems in understanding the environmental demand placed on students with ASD. It was also expected that the educators' roles would be significant in providing this perspective, with special education teachers performing better in identifying and describing ASD-related challenging behaviour because, of the five educator sub-groups, they were most likely to be exposed to such behaviour on a consistent basis. It appeared from the Study 2 data that the differences in role and experience between special and general education teachers did not account for the differences in knowledge of ASD-based challenging behaviour. However, the major factor in identifying relevant behavioural targets was having received training or professional development in either FBA or ASD.

The difficulty that was expressed by the majority of educators in identifying specific challenging behaviours is particularly relevant to the application of an FBA process. The identification of behavioural targets relates to the development of a well-established, operational definition as a prerequisite to conducting an FBA. Difficulty in identifying relevant targets means that, even if educators possess a solid FBA knowledge

base, misapplication of assessment techniques is likely, resulting in potentially invalid behavioural analyses (Allday, Nelson & Russel, 2011).

12.4 Barriers to the Implementation of FBA in Schools

The current study identified several educator beliefs which could act as barriers to the implementation of FBA into schools. It was found that educators held beliefs about FBA that were not consistent with the currently accepted literature on FBA. Significantly, while a majority (54.8%) of educators acknowledged that FBA helps to develop individualised intervention, two thirds of the educators surveyed (66.7%) indicated that FBA was not used regularly in their schools. Perhaps more impactful to the implementation of FBA in schools was the finding that almost half (47.7%) of the educators surveyed reported either that they did not believe FBA was useful in helping to understand classroom-based behaviour or that they were unsure if this was the case. This may have been due to a lack of understanding of the aims and purposes of FBA, plus an over-emphasis on obtaining immediate outcomes which may be at odds with any protracted data-collection process.

FBA researchers (e.g., Matson & Minshawi, 2006; Bloom et al., 2011) have advocated that, if implemented well, FBA information-gathering procedures (e.g., the collection and subsequent analysis of behavioural data) are just as important in understanding challenging behaviour as the outcomes of those procedures (e.g., the creation of a functional hypothesis). The implication of process over outcome is that an ongoing behavioural assessment helps to shape understanding of individual student behaviour over time, avoids error and bias often associated with one-time-only assessment procedures and provides a scientific basis to support all following decisions regarding

behavioural intervention. This is considered crucial in understanding the often complex and multi-faceted challenging behaviour exhibited by students with an ASD (Day, Horner & O'Neill, 1994; Kennedy, Meyer, Knowles & Shukla, 2000).

Yet, despite research purporting the benefits of FBA, participant responses indicated disagreement with this literature, suggesting that FBA was too time-consuming (65.2%), or complicated (62.8%) to use in schools. The significance of this finding is the extent to which these beliefs about FBA are not consistent with the currently accepted literature which advocates that the selection and application of FBA methodology should be flexible and appropriate to the situation (Sugai et al., 2000; Hanley, 2011). This means that FBA should never be too time-consuming and complex because it must be matched to the time constraints and complexity of the presenting target behaviour, in order to minimise disruption while still providing a level of empiricism needed to develop an individualised ISP.

The most significant barrier that educators identified to administering FBA in their school was the need for dedicated training programmes in the philosophies and procedures associated with administering school-based FBA. A total of 73.7% of educators indicated that they believed that training was required in order to effectively implement FBA with their students with ASD. This belief was compounded by the reported lack of FBA training amongst those surveyed, with only 20.21% of the educators in the sample indicating they had received training. In Australia, O'Neill and Stephenson (2010) have been the only researchers to date who have reported an investigation of the impacts of FBA training. Their investigation focused on 92 behaviour specialists employed as district consultants in public schools in three educational districts of Sydney. While they

found that 98% of these behavioural specialists had received some form of training, it should be noted that 35% of those educators were self-educated and a further 43% of participants had received only one day's FBA training. Considering that, even amongst educators whose major responsibilities involved the administration of behaviour management strategies, such large numbers had received little formal instruction on how to perform FBA, it is perhaps unsurprising that this study found such a low number of educators trained in using these methods.

12.4 Clinical and Educational Implications

The finding of Study 2, that educators described FBA as too difficult and/or time consuming, demonstrates that the links between FBA research and intervention in schools are more complex than currently believed by researchers. Currently, reports from FBA research (e.g., Bitsika, 2008; Bloom et al, 2011; Matson & Minshawi, 2006) have been suggestive of bridging this disconnect between more traditional, clinical FBA and the types of applied FBA that are required for use in environments such as schools. Hanley (2012) addressed the notion that FBA is too complex, suggesting that this was a myth which arose from a lack of understanding of the processes of FBA. Crone and Horner (2000) stressed that FBA procedures are underpinned by core conceptual and empirical foundations which should shape the usage of FBA within schools. However, most traditional research studies have been conducted within inpatient facilities and used analogue settings (Hanley et al., 2003) and these methodologies do not translate easily to educational settings. Furthermore, those studies that have been conducted in these settings are often performed by trained clinicians or researchers and not in schools by educators themselves. Compounding this problem for Australian educators is that the gap in translation from a research to an applied setting is further exacerbated by a poor fit

between American-based educational systems (where the majority of the research is conducted) and the systems that are present in Australia.

While there is no direct evidence from this study to suggest that the low knowledge levels of FBA translate into the difficulties those educators might have in responding to the challenging behaviour they encounter in their classrooms, several studies have explored the tendencies of educators towards reactive interventions regardless of the function of behaviour (Scott et al., 2005; Blood & Neal, 2007; Gable, Hendrickson & Van Acker, 2001). Disinclination towards the application of behavioural data-collection was present throughout the study. This was present in educators' descriptions of their responsibilities with relatively few educators indicating that they viewed data-collection as an integral part of assessing student behaviour, as well as educators' responses to the clinical vignettes which indicated poor responses to the selection of data-collection techniques and a lack of referring to empirical data to support behavioural interventions. This distinct lack of application of data-collection strategies lends support to these researchers' claims that educators are implementing *reactive* strategies with little ability to provide evidence of intervention rationale and success. This raises important concerns regarding the validity of behavioural interventions that are selected in schools, particularly in light of the difficulties these educators had in identifying appropriate behavioural targets for investigation.

Dunlap et al., (2000) asserted that, in order for technical skills and competencies to be improved in the area of supporting challenging behaviour in students, a training curriculum must be created to assist educators. That so few front-line educators in this study had received such training highlights that, irrespective of whether FBA works in

schools, it is not used by educators due to a lack of training and the belief that it is too difficult.

12.5 Limitations of the study

There were a number of limitations in this study that must be acknowledged as they impact upon the interpretation of the results of the School-Based FBA Survey. The internal validity of the survey instrument used in this study was not formally tested for construct validity. Although a pilot study was run, and a review process was implemented to increase the precision and efficiency of the survey, no additional instruments or measures were implemented as a consequence of those reviews. Response rates for this study were low, and there was a large number of participants who did not complete the entire survey. This may have been due to a number of reasons, including that sections of the survey were too complex or confusing, that the survey was too long, and that participants may have been biased against FBA. A further limitation of this study is the unknown quality of the training that participants had received in FBA. While participants were required to identify the *types* of training that they had received, no follow-up questions were asked regarding the *amount* of training educators had received. Equally, the quality of content delivered during tertiary education or other forms of professional development was also not discovered.

There were also limitations to the external validity of the findings, as the sample was drawn only from the South-East region of Education Queensland. Further, participants were voluntary and therefore may have resulted only in recruitment of those with strong opinions and/or educators who found the research topic interesting. The participant sample was also highly heterogeneous in regards to educator role, background

and previous training. While this heterogeneity was expected given the variabilities inherent to the population from which the sample was drawn, it is unclear how representative the sample was. However, as an exploratory study, the collection of socially valid data from the educators surveyed was considered more critical in creating a platform for future studies.

12.6 Conclusion

Study 2 of this thesis investigated the knowledge and perceptions educators had in respect to the application of FBA-based processes in schools. At present, relatively few educators in the population from which this sample was drawn had received FBA training and this may have led to misconceptions about how FBA can be implemented in the school environment. The results suggest that, at present, current FBA knowledge is inadequate to provide educators with the methodologies they require to collect relevant data to assist their students with ASD. While barriers currently exist that prevent the transfer of knowledge of FBA into schools, opportunities exist to provide targeted FBA training which can address the needs and goals of Australian educators.

Chapter 13:

Combined Discussion for Study 1 and Study 2

This thesis aimed to address five questions in relation to the translation of FBA into Queensland schools. These questions arose from criticism regarding the application of FBA into an applied environment from FBA theory based in scientific research. These questions (presented in Section 5.3 page 70) are reiterated below:

1. What do educators know about FBA aims, procedures and outcomes as these apply to investigating the challenging behaviour of students with ASD?
2. Are there differences in FBA knowledge relative to the roles educators fulfil in schools (i.e., classroom teachers, special education teachers, guidance officers and policymakers)?
3. Do educators undertake a formal assessment, involving data-collection on behaviour plus its precursor and maintaining factors, prior to selecting and implementing behavioural interventions for their students with ASD?
4. Do educators institute a data-collection process, during implementation of behavioural interventions, to monitor the effects of those interventions on the behaviour of their students with ASD?
5. What attitudes do educators hold in relation to the relevance of FBA as a process for assessing and remediating the challenging behaviour they regularly encounter when supporting their students with ASD in the classroom and wider school environments.

This chapter will address these five questions in relation to the results obtained from both Studies 1 and 2 and elaborate on the implications of those results to students with ASD, educators, classrooms, and the wider school environment.

13.1 Educator Knowledge of FBA Aims, Procedures and Outcomes

Central to the two studies which comprised the current research was ascertaining the knowledge-base of FBA aims, procedures and outcomes of Queensland educators to determine whether sufficient FBA-knowledge existed to effectively apply FBA in schools. As presented in Chapter 5 (Section 5.2.5 pages 64-65), researchers (e.g., Stoiber & Gettinger, 2011) have expressed concern that if the knowledge requirements for this application are too high, or if knowledge gaps exist in teacher repertoires for dealing with problem behaviours, this can lead to misapplication of intervention techniques or narrow intervention selection based on effectiveness with previous students, thus not meeting the criterion for individualisation arising from, behavioural data collected during in-depth assessment. Further concern has been expressed that current research aimed at addressing potential knowledge gaps may have limited focus on what teachers have to deal with (e.g., complex behaviour in socially complex environments) (Blood & Neal, 2007), and/or use behavioural principles and concepts in which teachers would not be grounded (O'Neill & Stephenson, 2011).

The present research uncovered some interesting trends regarding educator knowledge of FBA. Study 1 provided insufficient evidence of specific FBA knowledge as educators' descriptions of data-collection procedures within their schools bore little resemblance to current FBA practices. Even when further prompted, educators were largely unable to provide technical descriptions of these procedures. These results were

interpreted as evidence that gaps may exist; however, there was insufficient data to conclusively demonstrate that this was the case.

Study 2 was designed to further investigate educators' knowledge of FBA aims, processes, and outcomes by requiring educators to engage in clinical activities designed to replicate FBA processes. This study confirmed the presence of knowledge gaps in educators' application of key FBA concepts to clinical vignettes. Two findings from Study 2 are particularly relevant in answering how these knowledge gaps affect the application of FBA: (1) educators' with FBA training were much more likely to correctly apply the FBA concepts, and (2) the addition of a framework (i.e., the additional prompting) which provided more information on how to apply these concepts to the clinical vignettes improved responding for both those with and without FBA-based training. These findings suggest that a standard FBA protocol that is accessible to educators and provides easily understood content on the FBA process is needed. It is possible that the current technical information available to guide school-based FBA processes is confusing for teachers and other educators. A streamlined FBA training process that correlates with the needs and current roles of educators could enhance the technical adequacy of the assessment. Such a process could ensure that key components of FBA are included in student-based assessment but that they could be undertaken in a manner that is more accessible to educators.

13.2 FBA Knowledge Differences exist between Educator Roles

Studies such as that of O'Neill and Stephenson (2010) demonstrated that FBA knowledge may be present in certain sub-populations of educators, however, as yet there are no Australian studies which have investigated the variation in FBA knowledge based on educator role within the school. The present research aimed to ascertain whether such role-based differences existed.

Study 1 found the presence of inter-role variability in terms of FBA training, with those in support positions more likely to have received additional training, however, there was no evidence to conclude whether differences in training had an impact upon FBA knowledge. In Study 2 those in support positions were again discovered to be more likely to have received the additional training required to engage in FBA procedures than classroom teachers, special education teachers and teacher's aides. However, during the analysis of Study 2 it became apparent that knowledge-based differences were more likely to stem from differences in training and professional development rather than the positions themselves. What this suggests is that the opportunities for obtaining FBA-based knowledge may be restricted for classroom teachers, special education teachers and teacher's aides despite having larger contact with the student and additional responsibilities to manage challenging student behaviour. What the present research also uncovered was that ASD-based training plays an important role in correctly identifying the relevant targets for FBA when assessing the challenging behaviour of ASD students.

13.3 Structured Behavioural Assessment Systems Exist which inform Behavioural Intervention

FBA procedures seek to identify maintaining variables and stimulus conditions that influence the occurrence of target behaviour with an aim to using that information to implement meaningful, individualised treatment methodologies. The use of structured behavioural assessment systems to collect such information is well established via research (e.g., Kern & Dunlap, 1999; Gresham, Watson & Skinner, 2001). As FBA is not a singular technique, but rather a collection of techniques used to gain specific, individualised data on challenging behaviour, the provision of structure in the assessment process ensures a level of objectivity and cohesion (Witt, Daley & Noell, 2000). The development of clear and consistent structures and routines to guide and support educators to implement behavioural assessment procedures has been found to be critical in ensuring the accurate implementation of assessment procedures (Taylor-Greene et al., 1997)

The present research found that the current assessment processes within schools did not provide the consistency and clarity required to effectively execute FBA procedures. While there is evidence that formal assessment systems exist, the selection of classroom-based intervention was not reliant on the presence of behavioural data obtained through data-collection. Study 1 provided evidence of two co-existing assessment systems that may occur in school: one formal process aimed at providing resources and adhering to Education Queensland policy, while a second aimed at addressing short-term behavioural change strategies. Further, this study demonstrated that confusion about assessment procedures and educators' roles within assessment systems exist which may prevent the effective application of behavioural assessment. Study 2 further investigated specific roles and responsibilities associated with the behavioural assessment and

intervention of students with an ASD. Educators' descriptions of these roles demonstrated a clear divide between those who had received FBA training and those who had not, as those with training reported being responsible for a much larger percentage of these roles. The over-reliance on certain trained individuals to assess student behaviour, coupled with complex assessment systems, produces a scenario whereby the intuitive and flexible nature of FBA is lost. These results confirm the presence of a consultative model of FBA in Australian schools, however, it raises questions as to whether this model provides teachers within the classroom with enough guidance to assist those conducting behavioural assessments by providing accurate information in a timely manner.

13.4 Ongoing Monitoring of Behavioural Intervention does not Occur

Ongoing monitoring of behavioural intervention, through continued collection of behavioural data, is considered a central component of FBA to ensure success of treatment (Sugai, Lewis-Palmer, & Hagan-Burke, 2000). By providing tangible information regarding the ability of the student to meet specific treatment goals, ongoing data collection can provide a clear and objective framework for continuing review of behavioural intervention and can provide opportunities to amend and improve such intervention to better address individual need (Miltenberger, 2012)

Based on the findings of Studies 1 and 2, there was little evidence to suggest that ongoing monitoring of behavioural interventions by educators happened once those interventions were in place. Educator responses in Study 1 describing behavioural assessment procedures depicted these assessments as 'one-off' procedures designed to

provide insight into student behaviour. This was confirmed in Study 2, where relatively few educators were able to identify suitable evaluation procedures to review the success of behavioural interventions once implemented. While continued collection of behavioural data as a monitoring procedure to ensure successful behavioural intervention is a fundamental component of FBA, it assumes that behavioural data collection also occurred prior to the implementation of such interventions. The results from Study 2 indicate that behavioural data collection is occurring much less frequently than would be expected if FBA procedures were fully adopted by educators.

Of further interest when considering the ongoing monitoring of behavioural intervention were educators' responses to the need for remediation if it became evident that these behavioural strategies were unsuccessful. Larger proportions of educators indicated that they would change or alter strategies if they were unsuccessful, irrespective of whether they had received FBA training. This provides evidence that educators would most likely attempt to ensure successful intervention, however, given the lack of behavioural data used to monitor such interventions they may simply not have the resources to accomplish this.

13.5 Educator Perceptions and Attitudes towards FBA

The overall perceptions of educators gathered during Study 2, suggest that FBA does not suit their needs. This perception, whilst being valid and deserving of acknowledgement from researchers, goes against the findings from applied research and require further investigation.

In Study 1, almost no mention of FBA was made by the educators interviewed. While discussion of key components (i.e., data collection, identification of behavioural function) occurred within these interviews it was unclear, based on that data, what were educators' perceptions of FBA as a viable methodology for understanding their students' challenging behaviour. Study 2 provided greater evidence of educator attitudes and perceptions towards FBA. This study found that overall educators were more likely to have negative perceptions of FBA as an assessment methodology in schools, and were more likely to have misperceptions about the implementation of FBA. While most teachers in the study agreed that an FBA has usability, is effective, and practical they also felt it was too difficult to implement. Further analysis of these results found that negative biases towards FBA occurred more frequently with educators who had no exposure to FBA through prior training.

Researchers (e.g., Hanley, 2012) have dismissed such negative attitudes towards FBA as the acceptance of myth. These researchers claim that such negative attitudes are maintained due to the sheer number of FBA-based research literature which can often become inaccessible to groups of professionals such as educators. The terminology and concepts contained within such research literature can also become an obstacle to accessing the relevant information needed to engage in the highly discriminatory processes used in FBA. The weight of empirical evidence which demonstrate the effectiveness of FBA as an assessment methodology for challenging behaviour, both within and outside of the school environment, also lend credence that educators' negative attitudes towards FBA are inaccurate. However, if educators' are unable to access this empirical evidence, and have little opportunity to witness effective FBA in application,

then their attitudes are likely to influence their own assessment practices more than the current literature will.

While training is essential to both promoting competency, and combatting negative attitudes towards FBA, this goal is difficult to achieve because of the various educational needs of different educators (Scott et al., 2004). It is essential that a flexible training protocol be developed to further the knowledge of FBA which fits the particular needs of different educator groups. Dunlap et al., (2000) explained that a large part of teaching the FBA process is demonstrating the effectiveness of such a process and embedding trainees in the structure associated with objective and rigorous data collection.

13.6 Recommendations for Further Research

This research study attempted to increase understanding regarding the ways educators collect and use behavioural data when developing interventions for their students with ASD. While similar research has been conducted internationally, no such studies have investigated FBA practices in mainstream educators in Australian schools. The general lack within education literature regarding this topic might have obscured educators' practices and the potential, positive effects of such practices in managing challenging behaviour of students with disabilities such as ASD. The inclusion of mixed-methodology in this research, via qualitative vignettes, offered a detailed examination of the experiences of mainstream educators and the ways they collected and used available data in their respective school populations.

Although this study represents a basis for developing a larger body of research on the relationship between data collection practices of educators and improved management of the challenging behaviour expressed by students with an ASD, further research is necessary. Firstly (as discussed in chapter 9 page 135 and chapter 12 page 179), the samples for this study were drawn from a narrow pool of educators. Drawing participants from such a narrow pool impacts upon the ability to generalise the results obtained to all Australian educators and schools. Future studies should focus on investigating educators from other states and regions to ascertain whether the results obtained through this research are representative.

A second recommendation for future research would be the investigation of educator practices in a more naturalistic environment. The present research aimed only to explore the self-reported practices of educators regarding behavioural assessment and it is acknowledged that this may not accurately depict the full spectrum of educators' professional practices. Sasso, Conroy, Stichter and Fox (2001) criticise the lack of studies which accurately reflect the naturalistic environment or include student participants of varying levels of functioning and demand. This discrepancy between clinical and applied contexts is critical as the educators who work with students with ASD are often asked to apply FBA to difficult and demanding student behaviour. Future studies systematically observing educators' responding to such demand within a natural environment would provide a more reliable foundation to determine educator practices, competencies and limitations.

The present research found that educators have negative perceptions towards the application of FBA in schools which contrast with commonly held beliefs maintained by FBA researchers. These attitudes, combined with low technical competency, suggest the

need for targeted FBA training programmes aimed at providing teachers, special education teachers and teachers' aides with the necessary skills and information to implement FBA effectively in the classroom environment. The present research also found that educators had particular difficulty in both discriminating and organising behavioural factors (i.e. setting events, antecedents, behaviours and consequences). Future research is needed to assess the impact of such training programmes and to determine whether the provision of such knowledge and skills is sufficient to positively impact upon educators' assessment processes.

Lastly, the present research discovered the impact of ASD training on educator selection of target difficulties regarding the application of FBA procedures to students with ASD. This finding raises questions as to the effectiveness of both ASD and FBA training, in isolation and together, in preparing educators to apply FBA to their students with ASD. Future research is required to investigate the role of ASD training, in conjunction with FBA training, in assisting educators to more effectively target FBA with their students.

13.7 Conclusion

While FBA provides the means for educators to better understand the challenging behaviour of students with ASD there is little evidence to suggest that these assessment processes are being used in Queensland schools. While educators acknowledge the need for individualised intervention strategies aimed at managing such challenging behaviour, the lack of structured processes to develop these strategies casts doubt upon their individualisation.

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

The results from this research have identified several barriers which prevent the adoption of FBA as a common practice for these educators such as: lack of specific FBA training, negative attitudes towards FBA, inconsistency in assessment procedures and requirements, and misapplication of core FBA concepts.

The results of this research provide a basis for further development of FBA training programmes which could aim to address the identified barriers. Addressing the challenging behaviour of students with ASD could be made easier, by providing educators with the required skills, competencies and knowledge to first assess, and understand, the functions of these behaviours.

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APPENDIX A

DSM-5 DIAGNOSTIC CRITERIA FOR AUTISM SPECTRUM DISORDER

- A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive; see text):
1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
 2. Deficits in nonverbal communicative behaviours used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
 3. Deficits in developing, maintaining, and understand relationships, ranging, for example, from difficulties adjusting behaviour to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behaviour.

- B. Restricted, repetitive patterns of behaviour, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):
1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypes, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
 2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behaviour (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).
 3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).

4. Hyper- or hypo reactivity to sensory input or unusual interest in sensory aspects of the environment (e.g. apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behaviour.

- C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).
- D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.
- E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Note: Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

Specify if:

With or without accompanying intellectual impairment

With or without accompanying language impairment

Associated with a known medical or genetic condition or environmental factor

(Coding note: Use additional code to identify the associated medical or genetic condition.)

Associated with another neurodevelopmental, mental, or behavioural disorder

(Coding note: Use additional code[s] to identify the associated neurodevelopmental, mental, or behavioural disorder[s].

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

With catatonia (refer to the criteria for catatonia associated with another mental disorder)

APPENDIX B

**LIST OF KEY STUDIES WHICH INFORMED THE DEVELOPMENT OF THE
SCHOOL-BASED FBA INTERVIEW**

- Alter, P. J., Conroy, M. A., Mancil, G. R., & Haydon, T. (2008). A comparison of functional behavior assessment methodologies with young children: Descriptive methods and functional analysis. *Journal of Behavioral Education*, 17(2), 200-219. doi:<http://dx.doi.org/10.1007/s10864-008-9064-3>
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APPENDIX C

SCHOOL-BASED FBA INTERVIEW SECTION A

1. Participant Professional Details

- Position within school
- Years in education
- Experience with Autism Spectrum disorders
- Any further training/qualifications gained which might help address ‘special needs’ in schools.

2. Roles and responsibilities of school personnel involved in behaviour management in the school environment

- Which people within the school are involved in the care and education of a student who has been diagnosed with an Autism Spectrum Disorder (ASD)?
- What capacity are these people involved in the decision making process concerning student’s with an ASD?
- What do you see as your responsibilities towards educating and caring for a student diagnosed with an ASD?
- Does the respondent feel capable of dealing with students who have been diagnosed with an ASD?

3. Assessment procedures for challenging behaviour exhibited by students with an ASD

- What is the process whereby students are identified as needing additional assistance in a classroom setting?
- Who conducts assessment?
- What assessment techniques are employed?
- How long does the assessment process continue?
- What are the intended outcomes of the assessment process?
- How is the data collected through the assessment process used?
- Are assessment techniques employed to inform intervention strategies?

4. Intervention procedures for challenging behaviour exhibited by students with an ASD

- How does the respondent decide to intervene with a student experiencing difficulty?
- What types of intervention strategies are used?
- From where are intervention strategies sourced?
- How does the respondent choose appropriate intervention methods?
- Are the intervention methods employed individualised to suit student needs?
- How is it established whether an intervention strategy was successful/unsuccessful?

5. Resources for student with an ASD

- What resources are needed within the school setting to facilitate the ongoing care of a student with an ASD?
- What further resources are outside of the school setting to facilitate the ongoing care of a student with an ASD?

6. Knowledge of IEP/EAP in the school environment

- Why does the respondent believe IEP/EAP have been introduced into schools?
- Have IEP/EAP changed the way that the respondent addresses student's needs and behaviours?

APPENDIX D

FBA INTERVIEW SECTION B – CLINICAL VIGNETTES CASE BASED ON CHALLENGING BEHAVIOUR COMMON TO STUDENTS WITH ASD

Procedure to be used in presenting case studies to participants:

- Participant will be handed a written version of each case study and asked to read the information which relates to a hypothetical student with an ASD;
- Participants will be asked two standard questions for each case study –
 1. What do you believe are the important factors in addressing this student's behaviour?
 2. Can you outline what you might do to help this student overcome his/her behavioural difficulties?

CASE STUDY 1:

Alex is a student who has been diagnosed with Asperger's Syndrome. He has previously undertaken intelligence testing and the WISC-IV found the student to be of average intelligence. During this testing he performed well in processing speed and working memory, however, he showed significant deficits in verbal comprehension and perceptual reasoning.

Alex works quietly in class and the standard of work he produces is often of a high standard and he frequently finishes learning tasks before the other students in the class. He seems to perform well in class when there are minimum distractions and he is allowed to work unhindered. When presented with distraction, particularly from other students, Alex tends to exhibit signs of being uncomfortable often shifting or squirming in his chair, staring out the window, or making quiet grunting noises under his breath.

Alex's parents have expressed to the school that they are concerned that their son has not been socialising very much, and that he does not seem to have any friends at the school. They mentioned that their son has told them that he is "very lonely" and that he does not enjoy going to school most of the time. During school hours he is rarely seen socialising and can usually be found reading by himself or playing by himself in between classes. Other students have remarked that they find Alex 'weird' and show very little interest in spending time with him. Alex seems unconcerned by the other students' attitudes towards him and rarely stays in social interactions with other students for longer than a minute or two.

CASE STUDY 2:

Jenny is a student who has been diagnosed with Autism and it has also been suggested that she displays signs of Attention Deficit-Hyperactivity Disorder. Jenny is very energetic and continuously on the move, she often becomes excited or agitated by unexpected loud noises. Jenny also dislikes being touched by others and avoids physical touch whenever possible.

Jenny's grades have been very poor and she rarely ever completes or even attends to her school work during class time. At her best Jenny will sit quietly and draw. Jenny's parents do not seem to care much about her academic progress, and you have heard from teachers within the school that they believe that Jenny's Mum is happy that Jenny is attending school because that means that Jenny is not at home and is "somebody else's problem".

When presented with new situations or tasks Jenny displays defiance; ignores instructions and continues with whatever activity she was doing previously. If Jenny is given repeated instructions or if she is challenged by anybody to follow instructions Jenny will often become aggressive 'lashing out' either verbally or physically at either the person giving the instructions or at others who are close by. In class this results in Jenny being left to her own devices for much of the time as it is often easier than challenging her to complete her work.

If Jenny's behaviour becomes too disruptive to the rest of the class then she gets sent outside the class. This will usually be for the remainder of the class as on the occasions when she has been asked to rejoin the class she begins to show signs of aggression again.

APPENDIX E

EXAMPLES OF INTERVIEWING MICRO-SKILLS USED DURING THE FBA INTERVIEWS

Interviewing Micro-skills Used	Purpose	Example
Attending Behaviour	To encourage Participants to talk and demonstrate interest and engagement in what was being said.	Eye contact, positive body orientation, verbal and non-verbal encouragers.
Open Questions	Used to open discourse and prompt the participant to provide information on a topic by encouraging them to talk at greater length.	“How would you use an IEP in the classroom?”
Closed Questions	Used to clarify information or slow the pace of the interview.	“Who else is on the Special Needs Committee?”
Focusing	Used to direct the participants responses into certain areas when they may not have provided enough detail.	“When you say the term data collection, what types of data are you referring to?”
Summarising	To condense large responses from the participant or to finalise one line of questioning before moving to another.	Restating key parts of an extended communication with the client as accurately as possible.
Silence	Used to allow the participant time to reflect on a question or their response to a question.	Maintaining eye contact and pausing during note-taking while the client appears reflective.

APPENDIX F

SCHOOL-BASED FBA INTERVIEW - VIGNETTES CODING FRAME

Identified Factors for Addressing Student's Behaviour

THEME	DEFINITION	EXAMPLE
Targeted Social Information	The educator identified a need to develop interventions to assist the student to develop social skills or understand social interactions. This may include small group work, peer involvement or structured social skills groups.	“Obviously that he hasn’t been socialising much.”
Targeted Educational Adjustment or IEP Document	The educator identified a need for curriculum-based intervention or educational adjustment to assist the student. This also includes instances where the educator has expressed a need to develop an IEP for the student.	“Make sure that he is not just left doing stuff below his potential.”
Targeted Behavioural Difficulties in the Classroom	The educator identified the need for behavioural interventions within the classroom. This may include changes to routine, transitioning or the development of coping mechanisms to deal with demand.	“Consequences for completing school-work to try and get some positives.”
Targeted Communication Difficulties	The educator identified that the student had difficulties with communication such as difficulties with speech, expression of thoughts and ideas. This may also include the identification of difficulties in comprehension of either verbal or written instruction excluding intelligence sub-test results.	“I would be looking at changing the instructions so that they understand better”
Targeted Emotional Needs	The educator identified emotional targets which they believe impacted upon daily functioning or may be exacerbating current difficulties.	“Um I would try and help Jenny by giving time outside of class to release those pent up frustrations.”
Targeted IQ or other standardised test results	The educator targeted pre-existing test results as a basis for intervention or placed particular importance on test or subtest results in understanding the student’s current difficulties.	“Well I guess he has issues with verbal comprehension because of the test results.”
Targeted Others Perceptions of Student	The educator identified that the attitudes or perceptions of other students impacted on the case.	“I would make sure that he has friends looking after him.”
Targeted Parental Involvement	The educator identified parental involvement as an intervention need. This may include developing consistent interventions across both home and school environments, providing support for parents, or attempting to alter or change parent attitudes.	“The parents. I would look to see if the parents need support.”
Target Sensory Issues	The educator identified that sensory issues (ie sensory sensitivity or sensory seeking) may be impacting on the student’s behaviour.	“Loud noises seem to be an issue”

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

THEME	DEFINITION	EXAMPLE
Targeted Support for the Classroom Teacher	The educator identified the need to support the classroom teacher involved in the case study. This may include professional support, debriefing, provision of additional strategies, or developing the teacher's knowledge base.	"To try and teach the mainstream teacher to work with the student around withdrawal."
Need for Additional Information Gathering	The educator has made comments that suggest that there are gaps in the information presented in the case study, or has identified that they would like to know more about an aspect not included in the case study. This includes instances where the educator has suggested that they would like more information on ASD or generic information on interventions. This excludes instances when the educator proposed specific standardised tests or data collection methodologies.	"Possibly look at doing a cognitive assessment. I mean it says her results are poor but it does not mean that she is having cognitive impairments."
Made Assumptions about Case Study	Educator introduced information that is not contained within the written case study. This may include inferences of emotional state, motivation, peer interaction or parental involvement/attitudes that are not supported by the data contained within the case study.	"I guess it's hard if the parents are only doing the bare minimum." "Jenny is just frustrated because no one understands her."
Made Reference to IEP Document	Educator made reference to the IEP; either suggesting that they would like to see the IEP or that they would refer back to the IEP to assist them with their decision making.	"Well it really depends on what the IEP says, that's where I'd go first."
Used a Personal Case(s) as a Reference Point	The educator has made reference to a particular student or case and has used that case to suggest strategies. This includes instances when the educator references a case instead of using the case study itself or instances where the educator personalises the case.	"He is just like the boy I had from last year. Exactly like that."
Suggested the Need for FBA Data Collection	The educator has proposed specific data collection methodologies to assist in understanding the case study.	
Suggested Referral to External Professional	The educator has suggested that they would refer the student to an external professional for assessment, treatment or diagnosis.	"Yeah I would look for a referral as quickly as possible."

APPENDIX G

SCHOOL-BASED FBA SURVEY

PART A – BIOGRAPHICAL INFORMATION

1. Click on the box next to the school setting you currently work in

- ☐ Primary School
☐ Secondary School
☐ Special Education School

2. List the position you are currently employed to fulfil

[Click here to enter text.](#)

3. List the number of years you have worked in the education system

[Click here to enter text.](#)

4. List the highest academic qualification you have achieved

[Click here to enter text.](#)

5. a) Have you attended any training or professional development specific to the education, care or support of students with an ASD?

☐ Yes ☐ No

6. **b) (If YES)** Briefly describe the training you attended

Seminar Short Course In-service Training Self-Directed Learning
☐ ☐ ☐ ☐

Please provide brief details on the content of this training:

7. a) Have you attended any training or professional development which included Functional Behavioural Assessment?

☐ Yes ☐ No

8. **b) (If YES)** Briefly describe the training you attended

Seminar Short Course In-service Training Self-Directed Learning
☐ ☐ ☐ ☐

Please provide brief details on the content of this training:

PART B - YOUR RESPONSIBILITIES

Please rate your level of responsibility in performing the roles listed below during your day-to-day work (see definitions below).

- A Primary responsibility is central to your job and you perform it most of the time.
- A Secondary responsibility is part of your job and you perform it some of the time.
- An Auxiliary Responsibility is a duty you can be called upon to perform and you do so rarely.
- Not your responsibility at all.

1. Case managing a student with an Autism Spectrum Disorder

☐ Primary Responsibility
 ☐ Secondary Responsibility
 ☐ Auxiliary Responsibility
 ☐ Not a Responsibility

2. Providing behavioural, emotional or social support for the students with an ASD

☐ Primary Responsibility
 ☐ Secondary Responsibility
 ☐ Auxiliary Responsibility
 ☐ Not a Responsibility

3. Conducting standardised assessment (eg IQ testing, rating scales etc.)

☐ Primary Responsibility
 ☐ Secondary Responsibility
 ☐ Auxiliary Responsibility
 ☐ Not a Responsibility

4. Collecting data on student behaviour (e.g., observing or recording data)

☐ Primary Responsibility
 ☐ Secondary Responsibility
 ☐ Auxiliary Responsibility
 ☐ Not a Responsibility

5. Developing Individual Support Plans

☐ Primary Responsibility
 ☐ Secondary Responsibility
 ☐ Auxiliary Responsibility
 ☐ Not a Responsibility

6. Implementing behavioural strategies with the student in the classroom

☐ Primary Responsibility
 ☐ Secondary Responsibility
 ☐ Auxiliary Responsibility
 ☐ Not a Responsibility

7. Providing information on individual student's difficulties to other educators

☐ Primary Responsibility
 ☐ Secondary Responsibility
 ☐ Auxiliary Responsibility
 ☐ Not a Responsibility

8. Developing methods for ensuring consistent communication occurs between school and home.

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Primary Responsibility	Secondary Responsibility	Auxiliary Responsibility	Not a Responsibility

9. Evaluating the success of intervention strategies

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Primary Responsibility	Secondary Responsibility	Auxiliary Responsibility	Not a Responsibility

10. Delivering the academic curriculum to all your students in an effective manner

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Primary Responsibility	Secondary Responsibility	Auxiliary Responsibility	Not a Responsibility

PART C – Statements about FBA

The following ten items represent statements that have sometimes been made about using Functional Behaviour Assessment in the school setting to work with the challenging behaviour of students with disabilities. Please click on the box which indicates how true you think each statement is.

1. There are a lot of procedures to follow during a Functional Behaviour Assessment and this makes it too time consuming for use in schools.

☐ True
 ☐ Somewhat True
 ☐ Unsure
 ☐ Somewhat Untrue
 ☐ Untrue

2. Functional Behavioural Assessments that occur in schools are complicated.

☐ True
 ☐ Somewhat True
 ☐ Unsure
 ☐ Somewhat Untrue
 ☐ Untrue

3. The results from Functional Behaviour Assessments are useful in understanding the reasons for students' challenging behaviour.

☐ True
 ☐ Somewhat True
 ☐ Unsure
 ☐ Somewhat Untrue
 ☐ Untrue

4. Functional Behaviour Assessment cannot be done effectively without access to detailed manuals.

☐ True
 ☐ Somewhat True
 ☐ Unsure
 ☐ Somewhat Untrue
 ☐ Untrue

5. The challenging behaviour which generally occurs in the classroom setting cannot be addressed by a Functional Behaviour Assessment.

☐ True
 ☐ Somewhat True
 ☐ Unsure
 ☐ Somewhat Untrue
 ☐ Untrue

6. Functional Behaviour Assessments are used regularly in schools

☐ True
 ☐ Somewhat True
 ☐ Unsure
 ☐ Somewhat Untrue
 ☐ Untrue

7. Professionals who use Functional Behaviour Assessments need specialised training before being able to use it effectively with students in the school setting.

☐ True
 ☐ Somewhat True
 ☐ Unsure
 ☐ Somewhat Untrue
 ☐ Untrue

8. There is no one way to conduct Functional Behaviour Assessments, they are flexible and adaptable

☐ True
 ☐ Somewhat True
 ☐ Unsure
 ☐ Somewhat Untrue
 ☐ Untrue

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

9. Functional Behaviour Assessment leads to individualised intervention strategies capable of reducing students' challenging behaviour.

☐

True

☐

Somewhat True

☐

Unsure

☐

Somewhat Untrue

☐

Untrue

10. Functional Behavioural Assessments should be conducted by external professionals

☐

True

☐

Somewhat True

☐

Unsure

☐

Somewhat Untrue

☐

Untrue

PART D – Clinical Vignettes

The following section will present two (2) vignettes involving students with a formally diagnosed Autism Spectrum Disorder. Both students are experiencing a number of behavioural difficulties which are preventing them from accessing the school curriculum. Each vignette is presented below separately and contains its own set of instructions.

Vignette 1

The vignette below describes a student who displays a number of challenging behaviours in the classroom setting. Please read the vignette in order to identify the specific factors you believe are important to managing the challenging behaviour of this student. You will be invited to present your answer in the form of a student-focused summary which should contain all of the specific factors you have identified.

John is a new student who moved from an interstate school nine weeks ago. He was diagnosed with Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS) at four years of age. Information on his diagnosis was provided to the new school by John's mother because none of John's records were transferred from the previous school he attended. John's mother informed the new school that her son has always attended mainstream settings. She also reported that John is capable of engaging in all aspects of learning but that he sometimes requires support, particularly when there are large changes to routine or schedule. She has acknowledged that John has an unusual communication style in which he rarely makes eye contact and never initiates conversations. Despite peers being initially "put-off" by these behaviours, she notes that most of them become comfortable about interacting with John once they get to know him.

For the first two weeks, John appeared to settle into his new school quite well. He was quiet and reserved both in the classroom and in the school grounds, but this type of response was not considered unusual for a transferred student. John did not seem overly worried by the move to a new school and did not communicate any concerns to teachers or other staff. However, subsequent to this initial transition, John's behaviour has changed and teachers have noticed some behavioural difficulties which have occurred both in class and in the schoolyard. In the classroom John rarely listens to teacher instructions nor does he answer their questions, even when teachers present questions during one-to-one interactions with him. John often looks angry in class: he has been observed furrowing his brow, muttering under his breath and glaring at students who sit near him. If other students attempt to engage John in conversation, he usually ignores them and refuses to acknowledge or respond to any of their social overtures. This usually results in students giving up and leaving John alone. Sometimes he becomes agitated when other students approach him and, although there have been instances when these peers have tried to calm him down, John's anger has escalated and he has looked like he would hit out at them. During these times of high agitation, John's teachers have succeeded in settling him down by allowing him to work alone in a quiet area of the classroom. On the few occasions teachers have commented on his agitation or insisted that he engage in group work, John shuts down completely by using behaviours such as placing his head on the desk and covering it with his arms, refusing to look at the teacher who is speaking to him, or simply

continuing to work on a preferred activity he has chosen to do. These behaviours and John's general agitation have resulted in teachers allowing John to perform individual work even when the rest of the class is engaged in group-based tasks that would be of benefit to him.

In the schoolyard John has been observed to become upset with his peers and has periodically lost his temper. There has been an increase in the number of students who have complained of John becoming angry and screaming loudly during lunch time. There have also been a few occasions where these peers have told teachers that John had become violent and lashed out at them. Although John has not physically hurt any peers, there have been a number of student reports which indicate that John has pushed students to the ground or swung his arm with the intention of striking them. As a result, John's peers have started to avoid him. This in turn has led to discussions in the staff room regarding John's challenging behaviour and what might happen if the parents of John's peers complain to the school about their children's safety. Although no parents have contacted the school yet.

John's mother has been coming to school more often and appeared very upset about her son's behaviour. She reports that John is distressed when he arrives home from school and he has been telling her that he's the one who is often the target of bullying and teasing. John has said that he is sad and lonely because nobody likes him and he does not understand why. She is concerned by John's lack of friends and his comments that he no longer wants to go to school. When teachers have attempted to discuss John's behaviour with him, he has remained silent but also seemed unconcerned about the negative impacts of his behaviour on his peers, his teachers, and his own learning.

1. Write a student-specific summary of this scenario, in relation to John, that focuses upon the problem behaviour, associated factors, and possible intervention options.

Vignette 2

For the following vignette, you will be asked to read about one incident of problem behaviour for a student diagnosed with an Autism Spectrum Disorder. Once you have read the details of this incident, you will be provided with a series of questions focused on identifying key factors that would be useful in conducting a Functional Behavioural Assessment.

James is an eleven year old student with poor expressive language; his speech consists of concrete statements which sometimes do not relate to the topic being discussed. He also speaks with a monotone voice, rarely adding inflection. James performs very poorly in English, his writing is sloppy and almost illegible and he appears unable to comprehend the material he is required to read. Due to these difficulties, James's teachers suspect that he might have an intellectual impairment. James often says that he does not like school and would prefer not to attend.

James has returned from suspension for a particularly violent outburst during which he threw chairs in the classroom and threatened staff members in one of his afternoon English classes. On the day in question James had arrived late to school. He seemed unsettled at first but was allowed to spend time on one of the iPads by himself outside of the classroom for most of the morning to help him settle down. During lunchtime he came to the admin office and said that he did not want to go back to class and wanted to keep using the iPad for the rest of the day. However, after lunchtime his teacher aide observed that he was calm so he she sent him to his afternoon class. During that class he was asked to engage in a writing task with the rest of the students but he did not attempt to begin the task. When one of the teacher aides attempted to help him re-engage in the task he started to yell that he wanted to go home and pushed her away. The teacher asked him to step outside to calm down but he refused. He was told that he either needed to do his work or step outside. Instead, he proceeded to grab chairs and toss them around the classroom (although not directly at anyone). The classroom was vacated and James was locked inside by himself. James quietened down and stopped throwing chairs when he was left alone, but every time his teacher went to the window to check if he had settled down his behaviour escalated and he started throwing chairs again. James' mother was called to collect him from school and arrived about 30 minutes later. As soon as James saw his mother he immediately calmed down and approached her.

Section 1 – Open Questions

Please use the material presented in the vignette to provide responses to the following topics:

1. Please list any setting events or general factors which appeared to predispose James to engage in throwing chairs.
2. Please list the specific antecedents which appeared to act as triggers for this outburst.
3. Please list any functions for James, that throwing chairs might have served in the classroom setting during the English lesson.
4. Please describe the types of assessments (if any) you would administer to further understand the reasons why James engaged in chair throwing when he was in the English class.
5. Please describe the strategies you would put in place to reduce or prevent this behaviour from happening in the future.
6. Please list the process(es) you would use to identify whether your strategies were succeeding in helping James to stop engaging in chair throwing.
7. Please describe how you would deal with the situation in which your strategies were no longer effective in reducing/preventing James' chair throwing.

Section 2 – Closed Questions

Please use the material presented in the vignette to select the response you believe to be most correct to the eight questions below.

1. Please identify the setting event or general factor which most likely predisposed James to engage in chair throwing.
 - (a) James probably has an intellectual impairment in addition to an ASD
 - (b) James does not like coming to school
 - (c) James' daily routine was disrupted
 - (d) James was required to attend a class he finds difficult.

2. Please identify the antecedent which was most powerful in triggering the chair throwing.
 - (a) James arrived late to school and his routine was disrupted
 - (b) James was asked to go to English class
 - (c) James was asked to engage in the writing task
 - (d) James was feeling generally aggressive and violent

3. Please identify the function the chair throwing might have served for James during the English lesson.
 - (a) James was trying to access a preferred activity, playing on the iPad
 - (b) James was trying to obtain attention from the teachers, principal and his mother
 - (c) James was trying to regulate his emotion by reducing his anxiety and/or anger
 - (d) James was trying to escape from English class

4. Please identify the factors you would target as requiring assessment to further understand the reasons why James engaged in chair throwing when he was in the English classroom.
 - (a) James' previous history of violence and aggression
 - (b) The writing tasks he was asked to complete
 - (c) How James was feeling before he started throwing chairs
 - (d) Whether James is getting the support he needs at home

5. Please identify the types of assessments you would most likely administer to further understand the reasons why James engages in chair throwing when he is in the classroom.
 - (a) Intelligence testing to verify the presence of an Intellectual Impairment
 - (b) A standardised Functional Assessment tool (i.e. the MAS or the QABF)
 - (c) Direct observation of James in the classroom and the schoolyard plus data-collection
 - (d) A combination of data-collection and speaking to James as well as other staff and James' mother

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

6. Please identify the strategy you would put in place to reduce or prevent James from throwing chairs in the English classroom in the future.
 - (a) Referring James to counselling or therapy to help with his anger issues
 - (b) Identifying any low-level behaviour that leads to chair throwing
 - (c) Identifying any low-level behaviour that leads to chair throwing and creating strategies based on that behaviour analysis
 - (d) Disciplining James whenever he starts to become unruly or disruptive

7. Please identify the process you would use to identify whether your strategies were succeeding in helping James to stop engaging in chair throwing.
 - (a) Lack of Admin referrals for James
 - (a) Based on self-report from other Teachers and Teacher's Aides
 - (b) The collection of data through observation
 - (c) Intuitively, through understanding James and his behaviour

8. Please identify how you would deal with the situation in which your strategies were no longer effective in reducing/preventing James' chair throwing.
 - (a) Recommend further suspension or possible expulsion for James if he continues to be violent
 - (b) Try a different intervention to see if that works
 - (c) Keep persevering with the current interventions
 - (d) Collect more information on James via assessment

APPENDIX H

SCHOOL-BASED FBA SURVEY CODING FRAME

Vignette 1

One point for identifying and correctly classifying each behaviour/factor/strategy.

Problem Behaviour

Displays Agitation when approached by same age peers

Shutting down from/ignoring teacher instruction

Screaming and lashing out at other students

Refusal to engage in group based activities

Total Possible Score = 1 (comprising one of above + classification as Problem Behaviour)

Associated Factors

Requires Routine

Sad and Lonely/ isolated

Is at a new school

Unusual communication style

Mother is concerned

Unmotivated to attend school

Total Possible Score = 1 (comprising one of above + classification as Associated Factor)

Options in working with the student

Collect baseline data

Create student profile (i.e., understand communication difficulties etc).

Increase structure and/or routine in classroom

Facilitate social interaction with peers

Positive Reinforcement for desirable behaviours

Total Possible Score = 1 (comprising one of above + classification as Work Option)

Vignette 2

8. Please list any setting events or general factors which appeared to predispose James to engage in throwing chairs.

Being asked to move from a preferred activity/class to a non-preferred activity/class 1 point

Total Possible Score = 1 (answer must refer to preferred to non-preferred transition)

9. Please list the specific antecedents which appeared to act as triggers for this outburst.

James was asked to engage in the writing task 1 point

Total Possible Score = 1 (answer must refer to writing)

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

10. Please list any functions for James, that throwing chairs might have served in the classroom setting during the English lesson.

FUNCTION LABEL: Escape

1 point

REASON/VALUED OUTCOME:

1. Being taken home and ending the school day/non-preferred class
2. Escalating covert changes

Only one of two possible reasons to get full point

1 point

Total Possible Score = 2 (1 point function label; 1 point valued outcome)

11. Please describe the types of assessments (if any) you would administer to further understand the reasons why James engaged in chair throwing when he was in the English class.

Identified specific assessment method necessary to FBA process

1 point

Identified one of the following four targets as a target for assessment:

1. Environmental changes over the course of the day
2. Ability to communicate distress to teachers
3. Identifying baseline academic skills and performance
4. Impact of interactional conflict on daily functioning

1 point

Only one of four possible targets needed to get full point

Used direct assessment method

1 point

Total Possible Score = 3 (1 point assessment method; 1 point target; 1 point direct method)

12. Please describe the strategies you would put in place to reduce or prevent this behaviour from happening in the future.

Identified the need to match intervention to results of assessment.

1 point

Suggested one of the following three possible individualised strategies which targeted James' difficulty:

1. Engaging in the class material
2. Communicating difficulties to teacher/teacher aides
3. Strategies which improved teacher/teacher aide interaction with James.

Only one of three possible individualised strategies needed to get full point

1 point

Total Possible Score = 2 (1 point match assessment to intervention; 1 point strategy)

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

13. Please list the process(es) you would use to identify whether your strategies were succeeding in helping James to stop engaging in chair throwing.

Suggest process for directly measuring James' behaviour 1 point

Suggest comparison between baseline and subsequent behaviour 1 point

Total Possible Score = 2 (1 point direct measurement; 1 point comparison)

14. Please describe how you would deal with the situation in which your strategies were no longer effective in reducing/preventing James' chair throwing.

Suggest withdrawal of ineffective strategies 1 point

Suggest specific FBA assessment to understand purpose of behaviour 1 point

Total Possible Score = 2 (1 point strategy withdrawal; 1 point FBA strategy)

Section 2 – Closed Questions

9. Please identify the setting event or general factor which most likely to predispose James to engage in chair throwing.

James probably has an intellectual impairment in addition to an ASD	1
James does not like coming to school	3
James's daily routine was disrupted	2
James was required to attend a class he finds difficult	4

10. Please identify the antecedent which was most powerful in triggering the chair throwing.

James arrived late to school and his routine was disrupted	2
James was asked to go to English class	3
James was asked to engage in the writing task	4
James was feeling generally aggressive and violent	1

11. Please identify the function the chair throwing might have served for James during the English lesson.

James was trying to access a preferred activity	1
James was trying to obtain attention from the teachers, principal and his mother	2
James was trying to regulate his emotion by trying to regain control over his environment	3
James was trying to escape from English class	4

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

12. Please identify the factors you would target as requiring assessment to further understand the reasons why James engaged in chair throwing when he was in the English classroom.

James' previous history of violence and aggression	2
The writing tasks he was asked to complete	3
How James' was feeling before he started throwing chairs	4
Whether James is getting the support he needs at home	1

13. Please identify the types of assessments you would most likely administer to further understand the reasons why James engages in chair throwing when he is in the classroom.

Intelligence testing to verify possibility of Intellectual Impairment	1
A standardised Functional Assessment tool (ie the MAS or the QABF)	2
Direct observation of James in the classroom and the schoolyard plus data-collection	3
A combination of data-collection and speaking to James as well as other staff, students and James' mother	4

14. Please identify the strategy you would put in place to reduce or prevent throwing chairs in the English classroom in the future.

Referring James to counselling or therapy to help with his anger issues	2
Identify low-level behaviour that leads to throwing chairs	3
Identifying low-level behaviour that leads to chair throwing and creating strategies based on that behaviour analysis	4
Disciplining James whenever he starts to become unruly or disruptive	1

FUNCTIONAL ASSESSMENT FOR ASD STUDENTS

15. Please identify the process you would use to identify whether your strategies were succeeding in helping James to stop engaging in chair throwing.

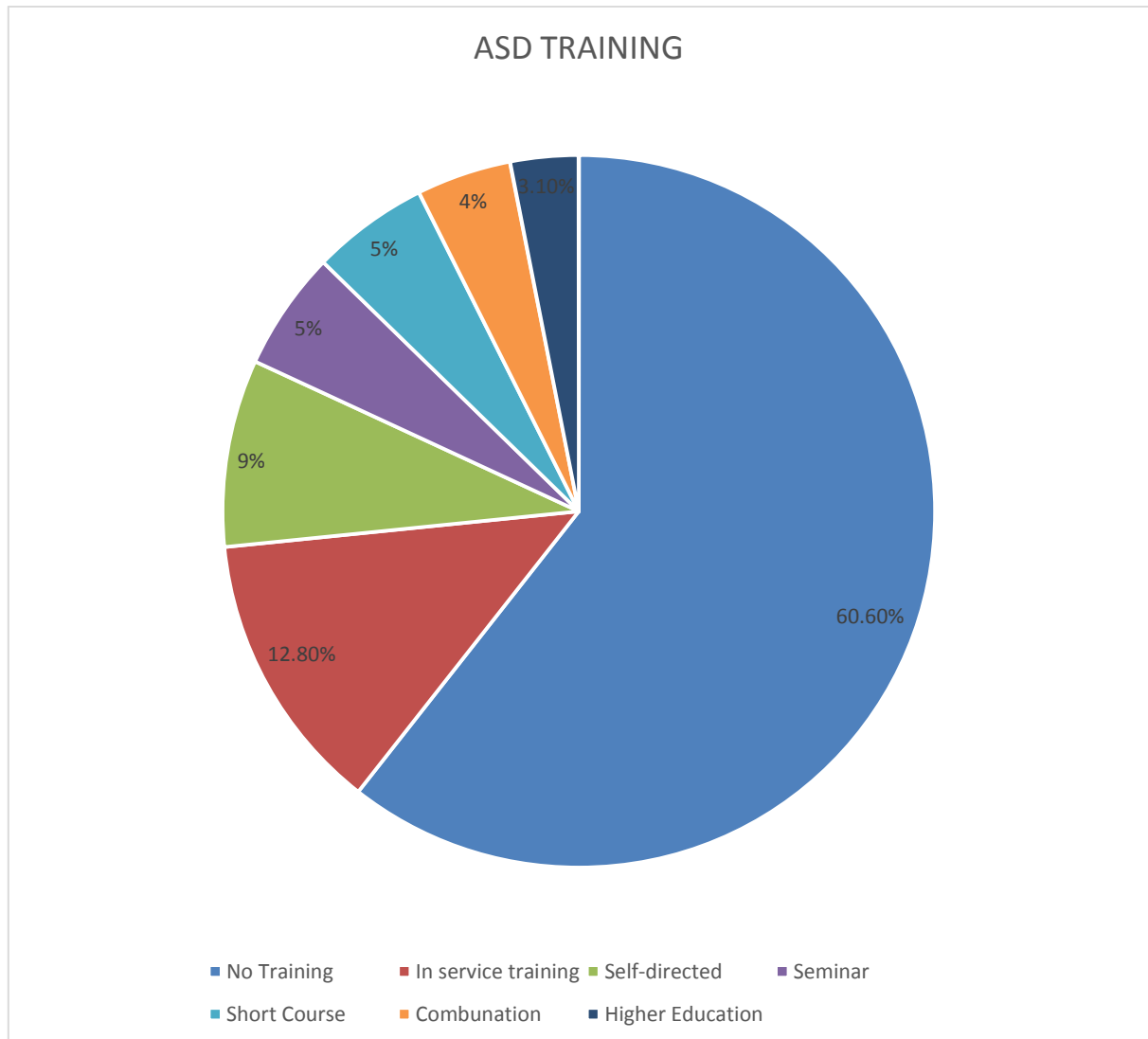
Lack of Admin referrals for James	2
Based on report from other Teachers and Teacher's Aides and general observations of James	3
The collection of data through observation	4
Intuitively through understanding James and his behaviour	1

16. Please identify how you would deal with the situation in which your strategies were no longer effective in reducing/preventing James' chair throwing.

Recommend further suspension or possible expulsion for James if he continues to be violent	2
Keep persevering with the interventions	1
Try a different intervention to see if that works	3
Try to gather more information on James via assessment	4

APPENDIX I

Full Breakdown of Types of ASD training received by Participants in Study 2



APPENDIX J

Full Breakdown of Types of FBA training received by Participants in Study 2

